

Final Environmental Impact Statement

**KALOKO
LIGHT
INDUSTRIAL
SUBDIVISION**

Kaloko, North Kona, Hawaii
Takemasa International, Inc.



prepared by:

WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS, ARCHITECTS and PLANNERS

July 1981

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FINAL
ENVIRONMENTAL IMPACT STATEMENT

KALOKO LIGHT INDUSTRIAL SUBDIVISION

Kaloko, North Kona, Hawaii

Tax Map Key: 7-3-09: portion of 1

This Environmental Document is Submitted
Pursuant to Chapter 343, HRS

Prepared for:

Takemasa International, Inc.
Honolulu, Hawaii


Kazuo Omiya, Secretary/Treasurer
Takemasa International, Inc.


Date

Prepared by:

Wilson Okamoto & Associates, Inc.
Planners, Engineers, Architects
Honolulu, Hawaii

July, 1981

FOREWORD

This Environmental Impact Statement has been prepared for Takemasa International, Inc. (formerly known as T.S.K. Associates), a registered Hawaii Corporation (hereinafter referred to as "T.I.I."), to disclose information on its proposed light industrial subdivision (sometimes hereinafter referred to as the "subdivision") situated on that certain property at Kaloko, North Kona on the Island of Hawaii and more particularly described in Figures 2 and 3, hereinafter referred to as the "Property". Takemasa International, Inc., one of the original partners of T.S.K., Associates, acquired the interests of the other two partners, Kobayashi Development and Construction, Inc., and Kazuo Omiya, Inc., on April 30, 1981.

The preparation of this document is pursuant to Hawaii Revised Statutes, Chapter 343, Environmental Quality Commission, and Environmental Impact Statements, and the Environmental Quality Commission Rules and Regulations.

The County of Hawaii Planning Department reviewed the Kaloko Light Industrial Subdivision Environmental Impact Assessment, April 1980, which was submitted by Wilson Okamoto and Associates, Inc. as part of a General Plan Amendment Application, and determined that a full Environmental Impact Statement is required. The Environmental Impact Statement Preparation Notice appeared in the EQC Bulletins dated September 8 and September 23, 1980. The deadline for requests to be a consulted party was October 8, 1980.

The Environmental Impact Statement was submitted to the Office of Environmental Quality Control in May, 1981. The document was available for comments between May 8, 1981 and June 7, 1981. Notices appeared in the May 8, 1981 and May 23, 1981 editions of the EQC Bulletin.

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SUMMARY

Applicant: Takemasa International, Inc.

Project Title: Kaloko Light Industrial Subdivision

Project Location: Kaloko, North Kona, Hawaii
Tax Map Key: 3rd Division - 7-3-09:portion of 1

Approving Agency: Planning Department, County of Hawaii

Individual to be Contacted: Gary Okamoto
Wilson Okamoto & Associates, Inc.
1150 So. King Street, Suite 800
Honolulu, Hawaii 96814

Description of Proposed Action: Development of a light industrial subdivision consisting of 194 minimum 1-acre fee simple lots. The total acreage involved is 240+ acres. Improvements will include an 80-ft. right-of-way (ROW) access road connecting Queen Kaahumanu and Mamalahoa Highways 60-ft. ROW. Interior circulation roadways, and water, electrical and drainage systems to County standards, to adequately service the project.

Significant Impacts:

- o Inventory of available industrial land
The Kona area is presently lacking in available industrial lands to meet the needs of the region. Lots offered in fee will encourage owners to invest in quality improvements, providing better services to the community. The present monopolistic situation will be eliminated, to provide prospective businessmen an alternative besides the very limited and costly Kona Industrial Subdivision, which is offered only in lease, when available.
- o Employment and economy
Expanded industrial activity will create new jobs and provide a wider range of services to the Kona area. Light industrial activity is not a primary industry and therefore will not stimulate population growth, but is complementary to, and supportive of business and population growth brought about by prime industries such as agriculture and tourism.

- o Public facilities
Takemasa International, Inc. will develop the necessary roadway, water, electrical and drainage systems, to meet County standards and to adequately service the project site. There will be no adverse impact to municipal infrastructure systems.
- o Water Quality
Drainage and cesspool contaminants contained by drywells and cesspools respectively, will be effectively filtered by percolating through the various layers of rocks, cinders, and soils. The presence of lava tubes or voids will be determined during construction using such methods as proof-rolling, loading, or use of a magnetometer. Any voids or tubes identified will be sealed to preclude the lateral and unimpeded movement of storm waters or effluent through the rock stratum.
- o Archaeological/Historical Resources
Kona is an area rich in historic and pre-historic resources. Recent archaeological surveys have revealed that there will be no significant adverse impacts to any historical resources on the project site. Furthermore, the project will have no significant adverse impact on the proposed Kaloko-Honokohau National Cultural Park to the west.
- o Visual/Scenic
Visual impact will be tempered by existing and planned developments on surrounding bends. A number of improvements presently exist along the mauka side of Queen Kaahumanu Highway in the vicinity of the project site.

A landscaped berm will be developed along the highway frontage to mitigate the visual impact to motorists. Landscaped internal roadways and screening of adjacent industrial improvements will be required. Landscaping, architectural design criteria, and other matters relative to this subject will be controlled through deed covenants.
- o Traffic
Traffic will not be adversely impacted by the proposed light industrial subdivision. Traffic volume will be increased on Queen Kaahumanu

Highway, Palani Road, Kuakini Highway, and other roads in the area, however, such increases do not necessarily change the level of service or cause the traffic to exceed the capacity of the roads.

The total peak-hour traffic volume on Queen Kaahumanu Highway in 1995, including the traffic generated by the light industrial subdivision, is expected to be 1,690 two-way trips. The peak-hour volume is within the capacity of Queen Kaahumanu Highway at service level E, which is 1,840 vehicles per hour. Additional traffic volume generated after 1995, due to over-all growth of the region, will exceed the highway capacity, and could warrant widening Queen Kaahumanu Highway.

Completion of the proposed connecting road (80-ft. ROW) between Mamalahoa Highway and Queen Kaahumanu Highway should alleviate traffic along Mamalahoa Highway and Palani Road. Establishment of the proposed industrial subdivision will remove some of the industrial related traffic from the congested urban center of Kailua Village.

Alternatives:

- o "No Project" Alternative
Although this alternative will retain the land in its natural, open condition, the potential economic and social benefits, and long range land use pattern benefits to Kailua Village and North Kona will not be realized.

I

Introduction

A. Location

The Property is situated in the North Kona District on the Island of Hawaii within the Kaloko Ahupua'a, and consists of 240+ acres located approximately midway between the town of Kaihūa-Kona and Ke-Ahole Airport. The Property abuts the mauka or eastern side of Queen Kaahumanu Highway, and is identified by TMK 7-3-09: portion of 1. (See Figure 1.)

B. Land Ownership

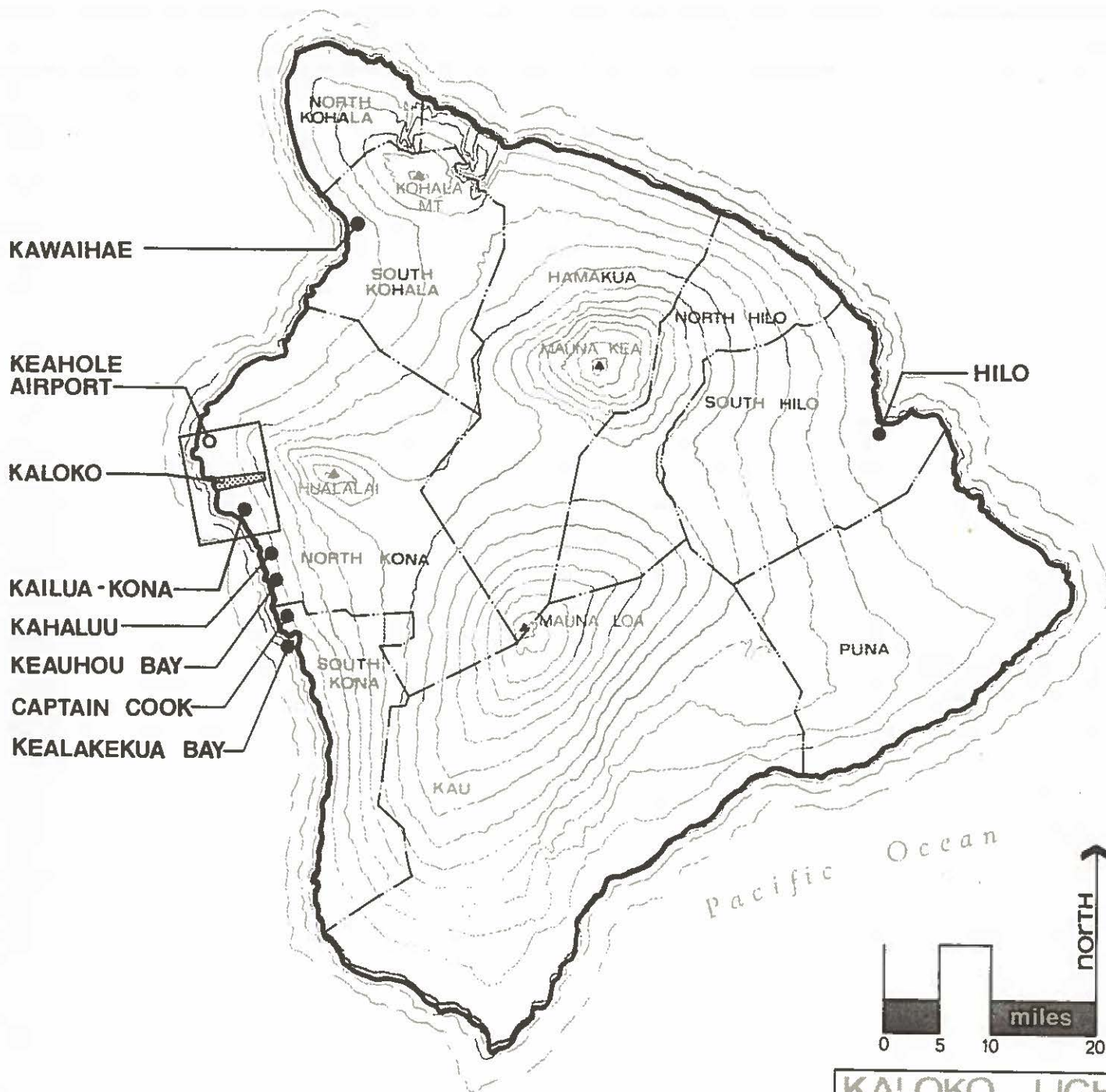
The Property constitutes a portion of the parcel of land, owned in fee by T.I.I., described in and covered by Royal Patent Grant Number 2942 to Hulikoa in Kohanaiki and Royal Patent Number 8214, Land Commission Award Number 7715, Apana II to Lota Kamehameha in Kaloko, District of North Kona, County and State of Hawaii, containing 1408.457 acres. (See Figure 2.)

C. Existing Use

The Property is presently vacant and undeveloped. The Property consists of large, barren masses of lava interrupted by patches of scrub vegetation and has been laying idle since its formation.

D. Abutting Lands

Abutting the northern and eastern edges of the Property are undeveloped Kaloko lands owned by T.I.I. On the southern side of the Property is the Honokohau 1st, owned by Lanihau Corporation. This land is leased to Pacific Concrete and Rock Company, Limited and is being utilized as a quarry and concrete batching plant. The western or makai boundary of the Property abuts Queen Kaahumanu Highway. Kaloko lands west or makai of the Highway are privately owned and unimproved; however, such land is presently under consideration by the Federal Government for acquisition and use as the site of the Kaloko-Honokohau National Cultural Park. (See Figure 2.)



Island of Hawaii

fig.1

Location

KALOKO LIGHT INDUSTRIAL SUBDIVISION

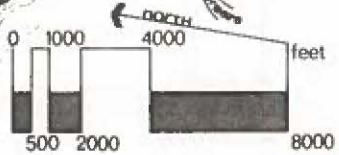
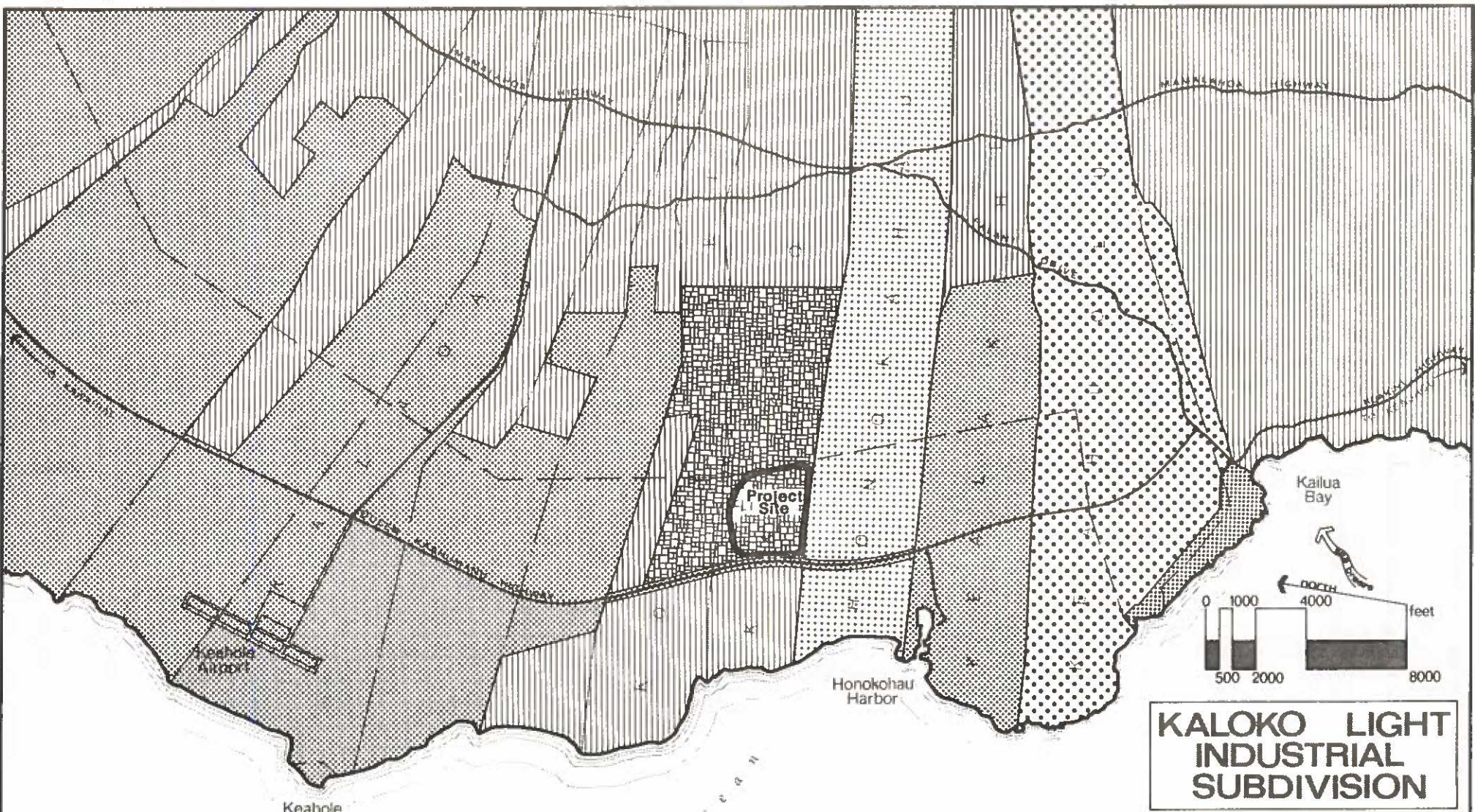
FOR KALOKO & KOHANA'IKI
Kaloko, North Kona, Hawaii

Developer : T.I.I.






Consulting: WILSON OKAMOTO
Architects & ASSOCIATES, INC.
Engineers Honolulu, Hawaii
Planners

Location : 3RD DIVISION-7-3-09:01
TMK

Development
Area : 240.48 ACRES
194 LOTS
Minimum: 1 Acre / Lot



Legend

-  T.S.K., Associates
-  State of Hawaii
-  Lanihau Corp. Palani Estates
-  Liliuokalani Trust Estate
-  Other Private Lands

KALO LIGHT INDUSTRIAL SUBDIVISION

FOR KALO & KOHANA Kilo, North Kona, Hawaii

Developer : T.I.I.

Consulting: **WILSON OKAMOTO & ASSOCIATES, INC.**
Architects Honolulu, Hawaii
Engineers
Planners

Location : **3RD DIVISION - 7-3-09:01 TMK.**

Development Area : **240.46 ACRES**
201 LOTS
Minimum : **1 Acre / Lot**

fig. 2
LANDOWNERSHIP MAP

II

Project Description

A. Need for Proposed Project

The County of Hawaii and particularly North Kona have experienced substantial population growths over the past 10 years. In 1970 the population of Hawaii County was 63,468 and according to the Federal preliminary census the present population is approximately 92,206 indicating a 45% growth. The population growth in North Kona has been tremendous. The population of North Kona in 1970 was approximately 4,832 and today it is estimated to be 13,793 reflecting a 185% increase in 10 years.

The fastest growing and largest industry in North Kona is tourism. It is becoming increasingly important to the County of Hawaii in terms of jobs, income and public resources. North Kona will remain the pivotal area of tourism growth for at least the next 10 years.

Lands available for industrial development have been extremely limited in the Kailua-Kona area. The County General Plan Revision Program (Ordinance 456) recognized this deficiency and designated certain additional areas for industrial use. These areas, however, are not zoned for industrial use.

The availability of leasehold or fee simple industrial zoned lands is practically non-existent. There is an immediate need in Kailua-Kona to provide facilities, which will support the area's growing primary industries such as tourism, agriculture, and resort development, together with the associated population increases.

The necessity of designating additional industrial land can be demonstrated in two ways. First, by showing that the present inventory of industrial lands is neither sufficient nor appropriately allocated. The second way is to document the extent of the availability and the demand for industrial property.

1. Present Inventory

There are two distinct types of industrial development. One sector is service oriented (non-basic) and is affected by population and the level of activity of other industries. The other sector is primarily influenced by outside markets (basic), and is usually found close to raw materials.

According to the County General Plan Revision Program, July 1978, there are essentially three industrial levels: 1) airport-related, 2) heavy industrial (quarries, etc.), and 3) light-industrial/commercial.

The only industrially zoned lands of significance in Kailua-Kona is the Kona Industrial Subdivision owned by Liliuokalani Trust. The subdivision was developed incrementally over a period of ten years with approval granted by the County as follows:

1st Increment approved July 11, 1969	(18 lots)
2nd Increment approved March 23, 1973	(11 lots)
3rd Increment approved June 6, 1977	(7 lots)
4th Increment approved June 12, 1979	(8 lots)
TOTAL	44 lots

Of the total 44 lots, two are roadway lots, one is utilized by the County, and another by the Hawaii Electric Light Company. The remaining 40 lots are minimum one-acre in size and total 52.429 acres.

The industrial lots located in the Kona Industrial Subdivision are zoned General Industrial (MG). This district applies to areas for uses that are generally considered to be offensive or have some element of danger.

Land and spaces in the subdivision are only available on a leasehold basis. The terms of the Liliuokalani Trust leases, being for a period of 30 years with lease rentals fixed for the first ten-year period, tend to inhibit or preclude favorable long term construction financing. In this context, the economics dictate lesser quality buildings to be constructed. Practices which force the market to a single supplier and function in such an inefficient manner supports monopolistic controls. Availability of land for light industrial use in fee simple in Kailua-Kona will not only create a free market but will also encourage quality construction and competitive rents for light industrial activities.

All existing lots in the Kona Industrial subdivision are presently under 30 year leases. Additionally, there are virtually no vacant spaces in existing buildings within the industrial subdivision. When vacancies occur, they are sublet or rented almost immediately.

An investigation of industrially zoned and vacant lands identified a total of 14.7 acres in North Kona. The entire acreage is located in the Kona Industrial Subdivision and comprises the 5th Increment of the subdivision. Liliuokalani Trust has received final approval for subdivision of the 14.7 acres into nine industrial lots; however, site development has not been initiated at this time. This investigation was coordinated with the County Planning Department.

2. Lands Designated for Future Industrial Use

The following are the only three areas within the Kailua-Kona region designated by the County General Plan for future industrial use:

a. Ke-Ahole Airport Area

The industrial areas at and surrounding Ke-Ahole Airport are deemed inappropriate for the types of light industrial activities proposed by T.I.I; inasmuch as such sites are intended to serve only certain specialized users, specifically, the airport, and the new "Natural Energy Laboratory" of Hawaii.

b. Kealakehe, Mauka of Queen Kaahumanu Highway

The second industrial area is located approximately two miles north of Kailua-Kona Village on the mauka side of Queen Kaahumanu Highway. It is in the general vicinity of the County rubbish dump. The County's LUPAG map designation for this land was amended from Conservation to Industrial under the County's General Plan Revision Program (Ordinance 456, effective July 16, 1979). The County described this industrial area as being reasonably close to the airport, harbor, and major commercial and resort cores, but still distant enough to avoid land use conflicts, traffic and other environmental problems. However, an industrial park may not be compatible with the County's proposed Kealakehe Regional Sports complex which is to be located adjacent to this area. The close proximity of the area to the sports complex may present adverse environmental and visual impacts.

The Kealakehe lands designated for light industrial use by the County are owned by the State of Hawaii. The State's plan for its Kealakehe industrial site was initiated in the 1960's but has not yet been implemented. In 1980, the State Legislature adopted a resolution (HCR 124) requesting a study to determine the feasibility of establishing an industrial park in North Kona. The resolution further authorizes the Department of Land and Natural Resources (DLNR) to proceed with development of the park if such a park is deemed feasible. The industrial park may be developed by (1) leasing public lands to a private developer or (2) entering into a private development agreement with a private developer for development and subdivision of such public lands as a leasehold project. It should be noted that such a development would not be sold in fee simple but made available on a leasehold basis.

In August 1980, the Board of Land and Natural Resources authorized the DLNR to conduct the feasibility study. The preliminary procedure to implementation entails a study, consultants to be hired, and funds yet to be appropriated. It is estimated that it may be two years before development begins.

The State should not duplicate or compete with private landowners proposing similar developments in the proximal area. It would be more appropriate for the State to utilize its land resources to provide public services and programs which are needed and not likely to be provided by the private sector.

c. Expansion of Kona Industrial Subdivision

The third area designated for industrial use by the General Plan Revision Program (Ordinance No. 456), is adjacent to the existing Kona Industrial Subdivision, at the entrance to Kailua Town. This is not an appropriate location since the expansion of the existing industrial area will unavoidably aggravate the land use conflicts and serious traffic problems presently occurring in the area.

From a long-range planning standpoint, further expansion of the existing Kona Industrial Subdivision which abuts the boundary of the Kailua Village Design area should be avoided. Expansion of the industrial area, as designated by Ordinance 456 appears to be in conflict with the goals and objectives of the Kailua Village Design Plan, County Ordinance No. 217.

The activities and appearance of a light industrial subdivision are generally incompatible with tourist oriented centers. Industrial activities are generally more noxious, and are characterized by structures and activities which are not necessarily aesthetically pleasing.

3. Appropriate Location

The site of T.I.I.'s proposed light industrial subdivision is appropriately situated centrally to residential areas of North Kona, providing convenient access to the potential work force, outside of the urban core area of Kailua Village. The site is an easy five-minutes drive from Kailua Village, and such distance minimizes land use conflicts and traffic congestion between the industrial activity and the commercial/tourism activity of Kailua Village.

The proposed site is centrally located with respect to the airport, harbor, and the major commercial and resort cores, but still distant enough to avoid land use conflicts, traffic and other environmental problems. Ke-Ahole Airport is approximately four miles to the north, Kawaihae Deep-Draft Harbor is 25 miles to the north and Kailua Village is approximately three miles to the south. The proposed site abuts Queen Kaahumanu Highway providing immediate access to the island-wide regional highway system.

Reasonable and adequate separation of industrial activities from Kailua Village is consistent with the Kailua Village Design Plan, Ordinance No. 217, to encourage a village-type atmosphere as a means of strengthening the resort/commercial functions of Kailua Town.

4. Market Demand

The Department of Research and Development of the County of Hawaii has generally concluded that based on the potential growth of Hawaii's West Coast, including such projects as the Natural Energy Laboratory of Hawaii, the expansion of the Ke-Ahole Airport, and the increase of tourist traffic volume, more industrial areas are needed (Land Use Commission, Docket No. A78-440). The projected development of resorts, recreational, and residential ventures along the South Kohala and North Kona Coast, will create a demand for supportive facilities.

This need for additional industrial land is articulated in HCR 124 "Requesting a study on the Feasibility of Establishing an Industrial Park in North Kona and if Deemed Feasible to Proceed with the Establishment of Such a Park" adopted by the 1980 State Legislature.

"WHEREAS, the Hawaii County General Plan revision envisions the need for additional industrial lands being set aside in North Kona.

WHEREAS, in recognition of the need to have more and alternative industrial areas in Kona amendments to the County General Plan were approved.

WHEREAS, there are approximately 260 acres of industrially zoned lands in Kona and all such lands are in use with the exception of a few scattered areas.

WHEREAS, the economy of Kona calls for a diversity of economic development ranging from the tourist industry, agriculture and energy related industries creating a need for additional industrial lands.

WHEREAS, the Kona population and tourist industry continues to grow and the demand for more industrial lands to accommodate the economic growth of the district has increased."

The Division of Land Management of the Department of Land and Natural Resources, State of Hawaii, in their letter of August 22, 1980 to the Board of Land and Natural Resources recommending the implementation of H.C.R. No. 124 contains a statement which clearly acknowledges the lack of and the need for industrial land in North Kona. The following is excerpted therefrom:

"As the resolution states, the Hawaii County General Plan revision envisions the need for additional industrial lands in North Kona. There are approximately 260 acres of industrially zoned lands in Kona and all of such lands are in use with the exception of a few scattered areas. The Kona population and tourist industry continues to grow and the demand for more industrial lands to accommodate the economic growth of the district had increased. There appears to be little doubt that the development of an industrial park or subdivision in North Kona is indeed needed and feasible."

T.I.I conducted a market analysis to determine the feasibility of developing a light industrial subdivision. Findings indicate that approximately 200 lots will be necessary to meet the demand for light industrial lots over the next 15 years.

The demand for these lots will be partially satisfied by the proposed expansion of the Kona Industrial Subdivision by Liliuokalani Trust. Approximately 70-75 one-acre lots are expected to be developed within the 100-acre expansion site.

Eighty-two (82) persons have expressed interest in purchasing fee simple industrial lots in the proposed T.I.I light industrial subdivision. This list of 82 interested persons is deemed to be a very conservative indication of demand. Additional requests to purchase lots have been received since the State Land Use Commission approved the boundary amendment for the project. The demand represented by these prospective buyers is in excess of the demand which will be absorbed by the supply of light industrial land within the proposed expansion of Kona Industrial Subdivision.

Liliuokalani Trust received 62 bonafide requests for lots in the Kona Industrial Subdivision between September 1978 and April 1980. (LUC Docket No. A79-470, Exhibit D). Nearly all of their proposed lots would thus, be accounted for by this list of prospective lessees.

Presently, the supply of light industrial lots in North Kona is controlled by Liliuokalani Trust, a large landowner. Nearly all of the lots have been leased to various individuals and firms for a period of thirty (30) years with lease rent (in most cases) fixed for the first ten (10) years. Subsequent rent is subject to renegotiation for each of the two successive 10-year periods following the end of the fixed rental period. The leases executed around 1970 had annual lease rents fixed for the first ten years at a rate of \$1,500 per acre. The rent was based on a six (6) percent annual return on an established fair market value of the land of \$25,000 per acre. The most recently recorded leases affected in 1979, reflect an annual lease rent of approximately \$8,000 per acre, which would indicate a current land value of more than \$140,000 per acre. It is expected that any lease requiring renegotiation of rent for the next 10-year period, will be increased to an annual rent of at least \$8,500 per acre per year.

Most of the leases contain provisions whereby lessees are required to construct improvements costing at least the minimum amount set by Lessor within a prescribed period of approximately two years. Further, the Lessee must surrender the leasehold land and improvements thereon in good condition to the Lessor at the end of the 30-year period, with no recovery by the Lessee of his cost of improvements.

The existence of only one industrial subdivision completely controlled by one owner is not in the best interest of the community. The high lease rents are attributed directly to a short supply, and an increasing demand. The payment of premiums to purchase existing leases from original lessees substantiates the existence of a strong demand and short supply of industrial zoned land.

Rentals charged by building owners in the Kona Industrial Subdivision are also relatively high. New leases currently being negotiated vary from a low of 35 cents per square foot per month, triple net (that is, the tenant is charged with all expenses of operation such as taxes, insurance, utilities, building and yard maintenance), for hidden warehouse space, without parking, office or plumbing, and

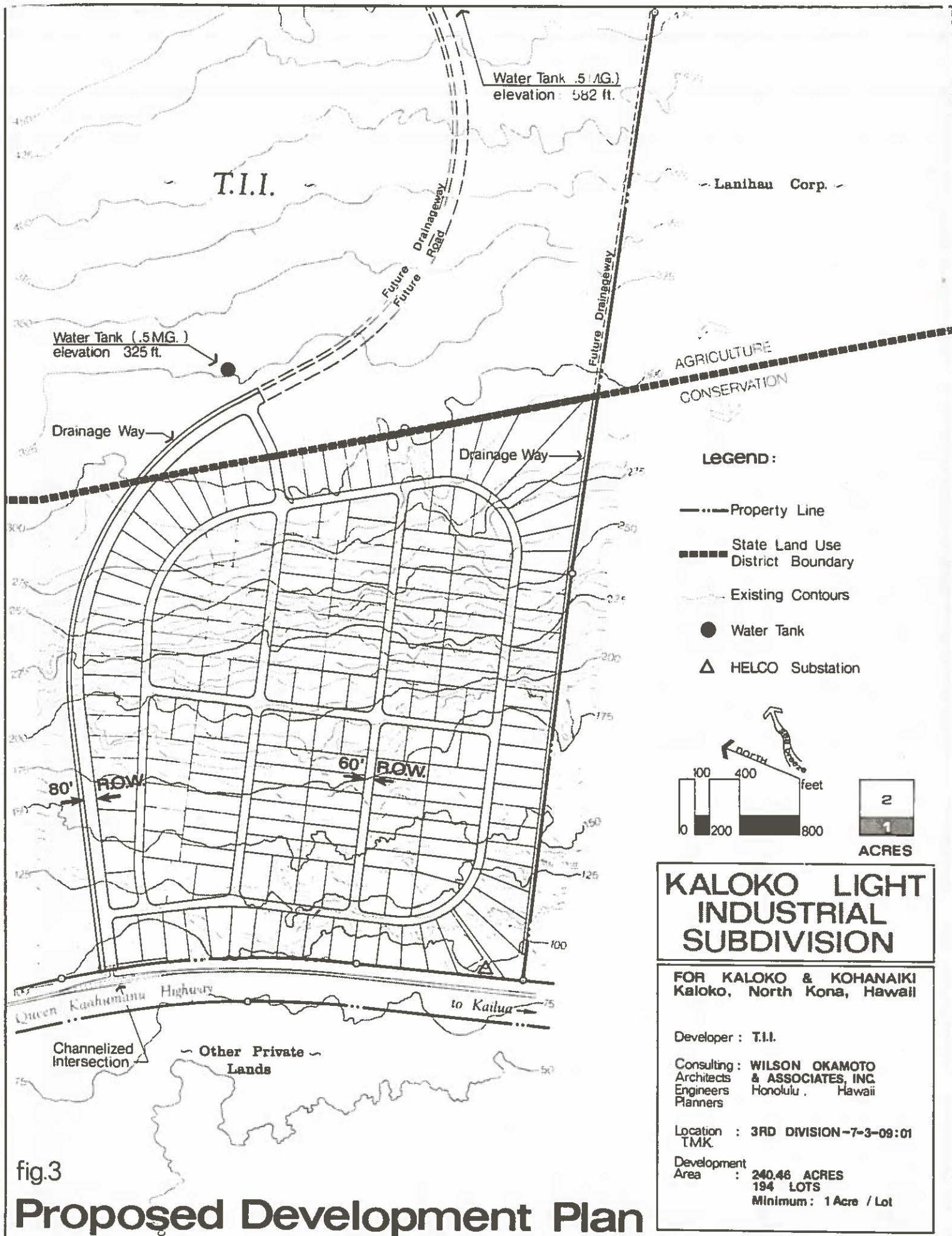


fig.3

Proposed Development Plan

only the barest electrical distribution, to a current high average of 60 cents per square foot per month, triple net, for spaces having frontage visible to the street, window space and some parking. (LUC Docket No. A80-482) Due to the high rental charges in the Kona Industrial Subdivision, the shortage of commercial space in Kailua-Kona, and the proximity of the Kona Industrial Subdivision to the existing resort-commercial core, a transition from industrial/warehouse tenants to retail/commercial tenants is currently occurring. Retail businesses can generally afford to pay higher rental charges and compete with industrial firms for the limited industrial spaces.

The light industrial subdivision proposed by T.I.I will be sold in fee simple, rather than on a leasehold basis. According to the aforementioned market survey, fee simple ownership is desired and sought by the preponderance of persons expressing an interest in acquiring land for light industrial purposes.

Availability of fee simple industrial lots will encourage orderly expansion, establishment of long-term businesses, and quality growth in Kailua-Kona.

Fee simple ownership will provide the purchaser with ownership in perpetuity, a means to finance improvements and the purchase of new equipment, the enjoyment of any increase in land values, and the creation of an estate for himself and his heirs beyond that which is possible under a leasehold situation.

B. Description of Proposed Development Actions

1. General

The Property is planned to be developed into a light industrial subdivision which will provide appropriately located industrial land in fee simple suitable to the needs of wholesale merchants, light manufacturers, and others seeking such space.

Ultimately, the development will consist of 194 fee simple lots of one acre minimum size. The project site comprises approximately 240+ acres of land. (See Figure 3.)

2. Proposed Industrial Uses

The intended industrial uses include business and industrial uses which are generally in support of

activities in the commercial, agricultural, and resort districts of North Kona. Appropriate types of uses which have been proposed by interested residents and business firms include the following:

- General Warehouse
- Specialty Warehouse
- Truck & Freight Base Yard
- Carpenter & Construction Shop
- Automotive Service & Supply
- Body and Fender Shop
- Hardware Distributor & Warehouse
- Laundry & Dry Cleaning Plant
- Automotive Display & Storage
- Transportation Base Yard
- Machinery & Equipment Storage
- Lumber & Construction Materials Yard
- Fish Cold Storage & Wholesale
- Industrial Equipment Storage and Display
- Construction Equipment Storage
- General Contractor Base Yard
- Marine Products Sales & Service
- Industrial Building
- Food Processing Plant
- Metal Systems Storage

Accessory uses as permitted by the County of Hawaii Comprehensive Zoning Ordinance, No. 63, Section 20, Subsection B, Items 21, 22, and 23, will be provided in an appropriate location within the subdivision for the convenience of the people working in the area.

Each lot will be improved separately by individual lot owners and/or their tenants; however, the general appearance of the Property will be controlled through deed restrictions and covenants.

3. Infrastructure and Improvements

All necessary improvements such as roadways, drains, sewage disposal systems, water, street lighting, electric, and telephone connections will be provided and constructed in accordance with all applicable State and County Regulations.

a. Access

Access to the subdivision is off of Queen Kaahumanu Highway, which has a 300-foot right-of-way (ROW). Presently, the Queen Kaahumanu Highway is a two-lane, limited access highway and serves as the major connector between Kona and northern and northeastern parts of the County of Hawaii.

A channelized intersection with acceleration, deceleration, and left-turn storage lanes will be constructed by T.I.I for safe and convenient access off of Queen Kaahumanu Highway, in accordance with State of Hawaii, Department of Transportation guidelines.

Subject to acquiring all necessary governmental approvals for the subdivision, T.I.I plans to construct a new roadway within an 80-foot ROW connecting Mamalahoa Highway to Queen Kaahumanu Highway as part of this development. This is a much needed mauka-makai connector road that will not only allow convenient access to the subdivision, but will also alleviate the traffic congestion existing on the narrow, winding, and heavily congested Palani Road. Construction drawings for the upper segment of the road (3,600 ft.), have been approved by the County, and construction should commence shortly. The construction drawings for the middle segment of the road were approved by the County of Hawaii on July 28 1980. Bids have been negotiated and are expected to be awarded for this segment of the road. The final portion of the roadway, connecting to Queen Kaahumanu Highway, will be implemented together with Phase 3 of the industrial subdivision, or sooner as the need dictates.

Each lot within the subdivision will have direct access to a 2-lane paved interior service road within a 60-foot ROW.

b. Site Preparation

Approximately 240 acres of land will be cleared and grubbed in incremental phases. Waste material and scrub vegetation will be removed from the site and disposed at an approved location.

Grading will be limited to leveling high spots and filling localized low areas. Earth-moving operations of approximately 150,000 cubic yards of on-site material will be shifted within the Property. Appropriate erosion control measures will be implemented as required.

c. Roads

Internal circulation will consist of 60-foot wide ROW to service the subdivision. The roadways within the ROW will consist of 24-foot wide pavement with 8-foot paved shoulders. The 24-foot wide pavement will be

composed of 2-inch thick asphaltic concrete paving over 10 inches of base course and prepared on-site materials. Roadways will be designed for 30-mile per hour traffic. The minimum horizontal radius of curvature will be 500 feet. The roadways will have a minimum gradient of 0.5% and a maximum of 10%. (See Figures 3 and 4.)

d. Drainage System

A system of swales, drywells, catch basins and drainlines will handle run-off from the subdivision. This system will take advantage of the porous nature of the soils on the Property, and the availability of adequately sized existing culverts along Queen Kaahumanu Highway. The drainage facilities will be designed to comply with the requirements of the County of Hawaii drainage standards, and the State Department of Transportation, Highways Division. (See Figure 5.)

e. Sewage Disposal

Individual owners of the lots will provide their own sewer systems to conform with State of Hawaii, Department of Health, Public Health Regulations, Chapter 38, Private Wastewater Treatment Works and Individual Wastewater Systems.

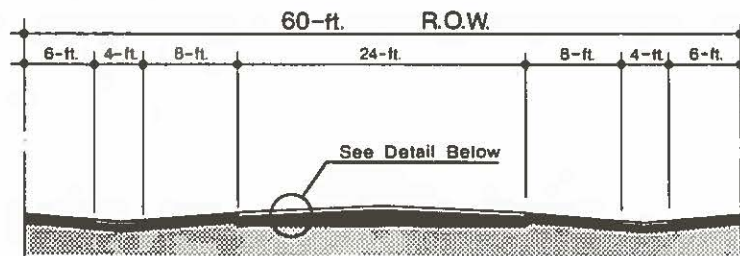
f. Water System

Two 500,000 gallon water tanks will ultimately be constructed--one at elevation 325+ ft., and the other at elevation 590+ ft.--to service the light industrial subdivision. An 8-inch service line will be installed within the subdivision. (See Figure 6)

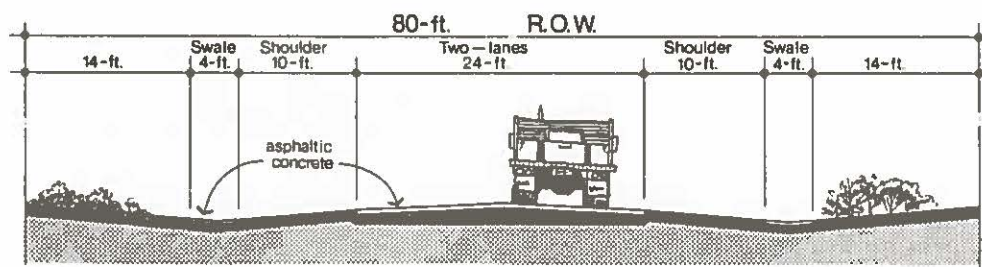
A commitment for water availability for the 194 lots in the proposed industrial subdivision has been issued by the Hawaii County Department of Water Supply contingent upon the completion of the Kuakini pipeline project (See Appendix A). The Kuakini project is expected to be completed at the end of 1981.

g. Electrical Power

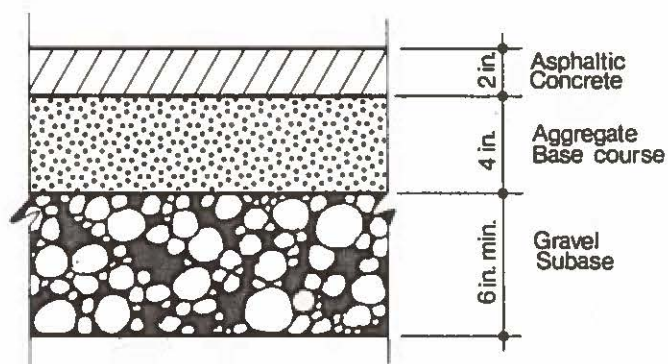
Electrical power to the proposed light industrial subdivision will be provided by the Hawaii Electric Light Company, a privately owned, State regulated public utility company. If connection to existing sources is not adequate or practical, then a



**SECTION thru TYPICAL
INTERIOR ROAD**



SECTION thru BY-PASS ROAD



DETAIL

**KALOKO LIGHT
INDUSTRIAL
SUBDIVISION**

FOR KALOKO & KOHANA'IKI
Kaloko, North Kona, Hawaii

Developer : T.I.I.

Consulting : WILSON OKAMOTO
Architects & ASSOCIATES, INC.
Engineers Honolulu, Hawaii
Planners

Location : 3RD DIVISION -7-3-09:01
TMK

Development
Area : 240.46 ACRES
194 LOTS
Minimum: 1 Acre / Lot

fig.4
ROAD SECTION & DETAIL

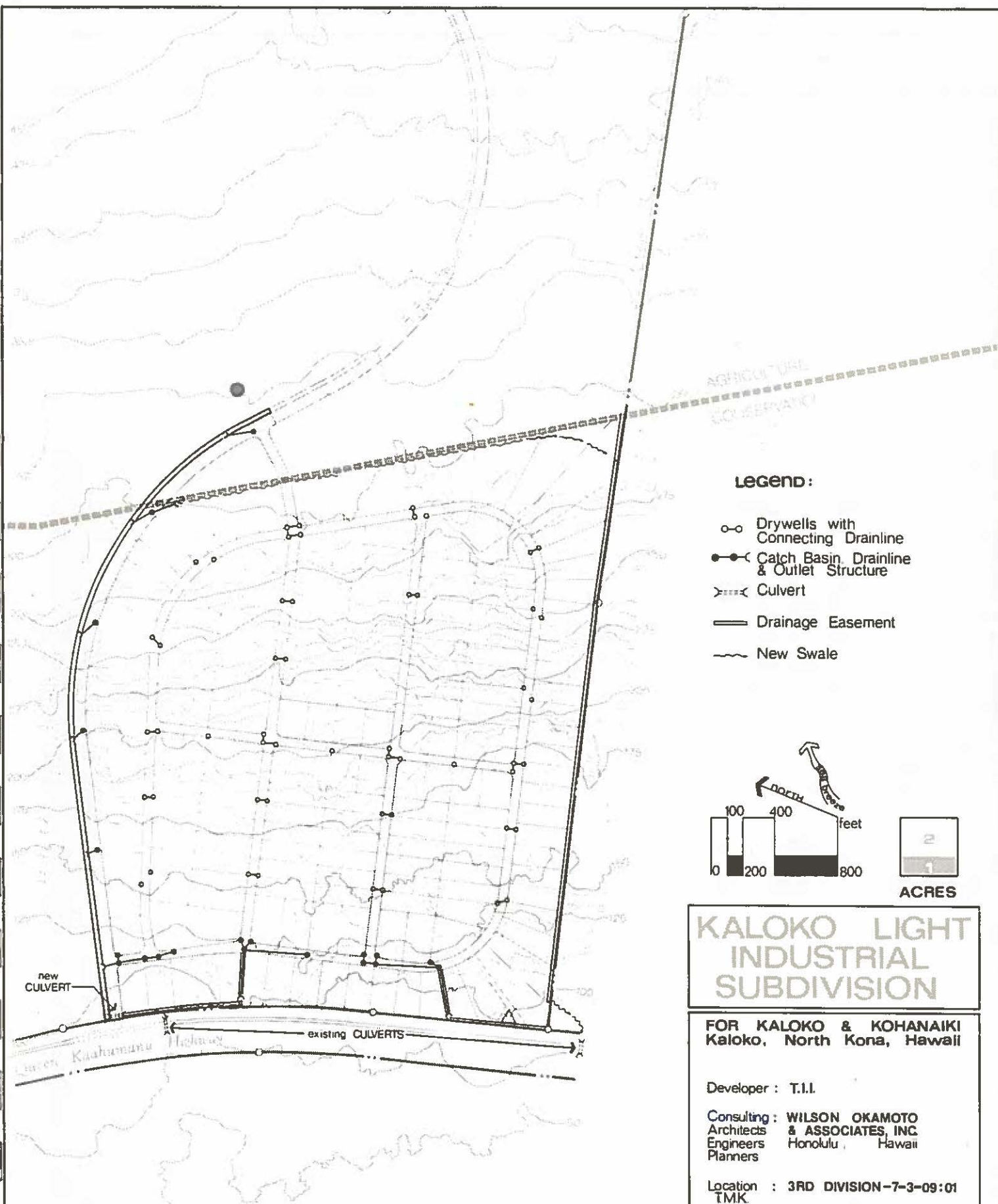


fig.5

Drainage System

sub-station of appropriate size will be constructed within the subdivision by T.I.I. It will be located near the southwest corner of the subdivision. (See Figure 7.)

h. Street Lighting System

The street lighting system will consist of lights on power poles with distribution from transformers installed within the subdivision. (See Figure 7.)

4. Development Controls

The general use and appearance of the light industrial subdivision will be controlled through deed restrictions and covenants to insure that standards acceptable to T.I.I and the County of Hawaii are met and adhered to.

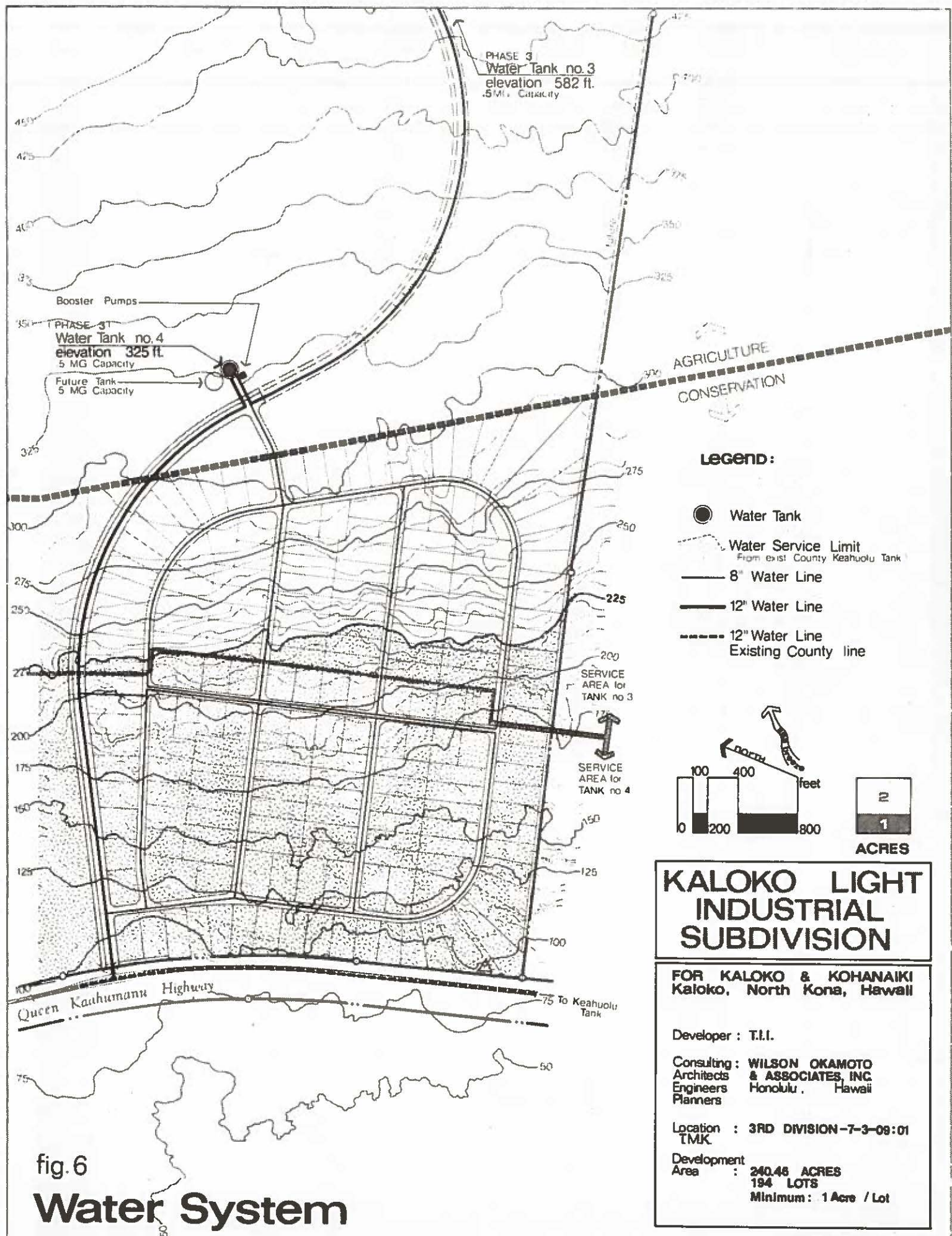
5. Development Timetables and Cost

Full urban development of the entire Property cannot reasonably be completed within 5 years after obtaining the necessary government approvals. Accordingly, T.I.I intends to accomplish the development of the Property in 4 phases (see Figure 8). Phases 1 and 2--consisting of 49 and 56 lots respectively,--will be completed within 5 years from the date of receiving the necessary government approvals; and Phases 3 and 4 shall thereafter be completed in successive periods not to exceed 5 years each. Incremental districting for each phase is being requested pursuant to the Land Use Commission's State Land Use Regulations, Part VI, Section 6-2. All lots will be marketed on a fee simple basis, at the then fair market value, according to the following estimated schedule:

<u>Phase</u>	<u>No. of Lots</u>	<u>Construction Period</u>
1	49	1981-1985
2	56	1981-1985
3	36	1986-1990
4	53	1991-1995
TOTAL	194	

The above dates are subject to obtaining all necessary governmental approvals and permits in a timely manner.

The on-site and off-site construction costs for the proposed development are estimated to be \$10,949,000.00. (1980 dollars)



This total will be distributed among the four development phases as follows:

Activity	PHASE 1	PHASE 2	PHASE 3	PHASE 4
Site Improvements	1,584,000	1,806,000	1,614,000	1,700,000
Channelization	547,000			
Queen Kaahumanu Hwy.				
Electrical Substation	982,000			
Mauka-makai 80-ft. ROW			744,000	
Connecting Road				
2-0.5 MG Water Tanks			1,972,000	
TOTALS	\$3,113,000.	\$1,806,000.	\$4,330,000.	\$1,700,000.

C. Relationship to Public Land Use Policies and Controls

This section provides a brief description of existing land use controls applicable to the Property.

1. State Land Use

State Land Use designations along the coastal lava plain between Kiholo Bay and Kailua Village include Urban, Agricultural and Conservation Districts. The Urban District includes the Kona Village Resort, the Ke-ahole Point area, and the portions of the Kaloko to Kealahou land divisions makai (west) of Queen Ka'ahumanu Highway. The remainder of the coastal area from the shoreline to lands mauka (east) of Queen Ka'ahumanu Highway are within the Conservation district except for the area of the proposed Ke-ahole Agricultural Park which is within the Agricultural district. The lands mauka of the Conservation district are within the State Land Use Agricultural district.

The land use designation for the Property was changed from Conservation to Urban on February 3, 1981 by the State Land Use Commission. The proposed light industrial subdivision is allowed within the State Urban District designation. (See Figure 9.)

2. County General Plan

The General Plan Land Use Pattern Allocation Guide Map designates large portions of the coastal lava plain between Kiholo Bay and Kailua Village as Open and Conservation. There are also Extensive Agricultural designations both mauka and makai of Queen Kaahumanu Highway.

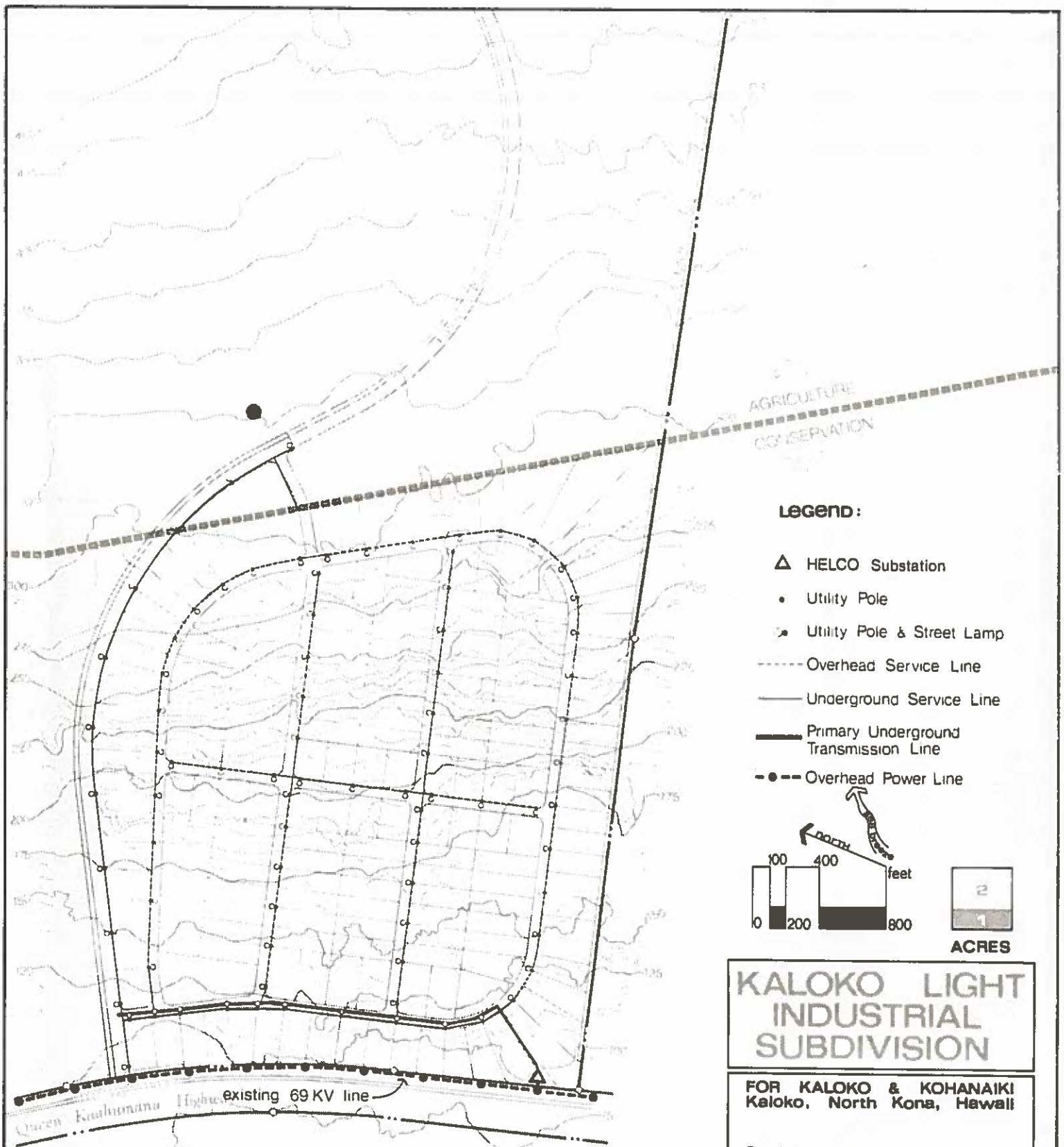


fig.7

Electrical & Street Lighting System

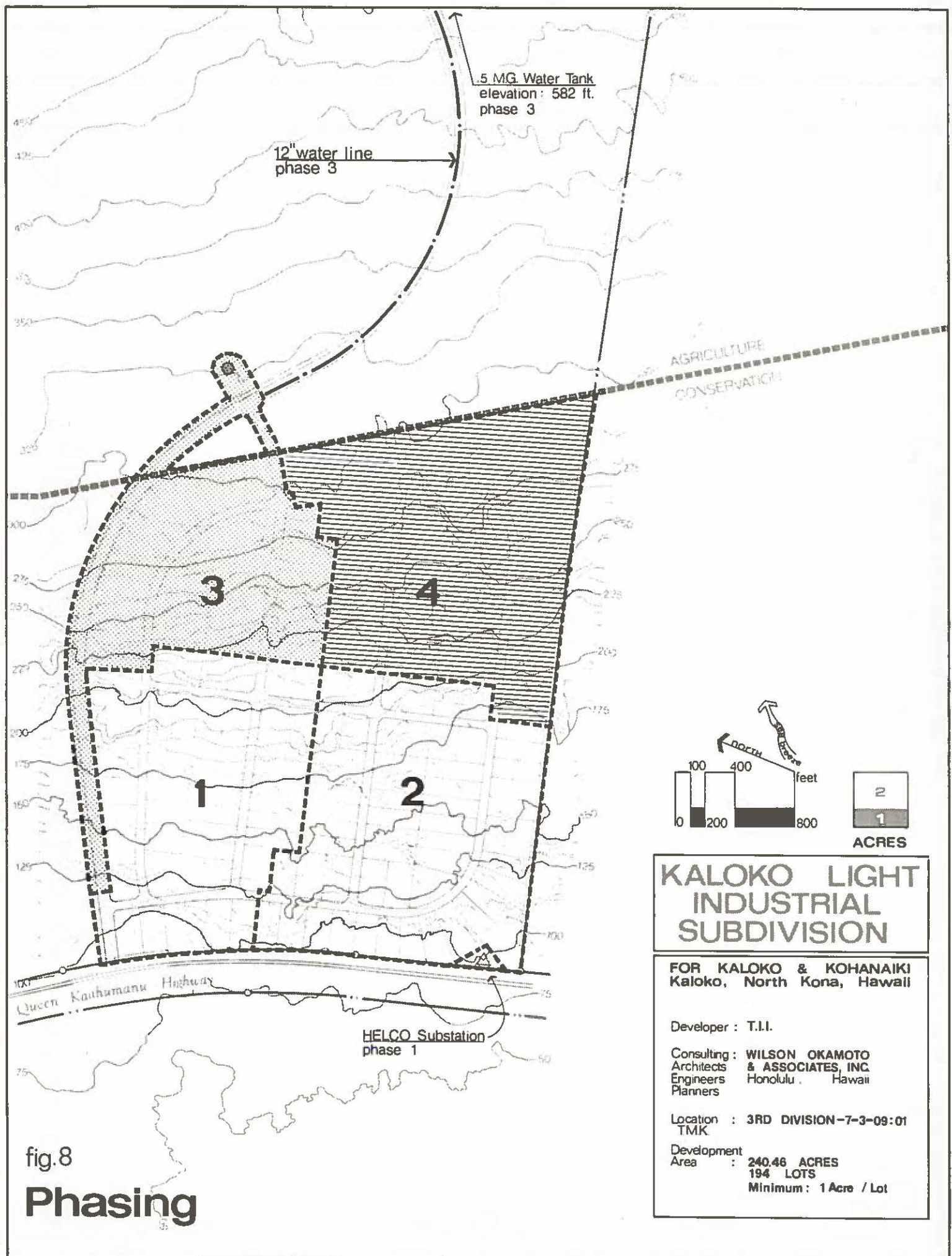
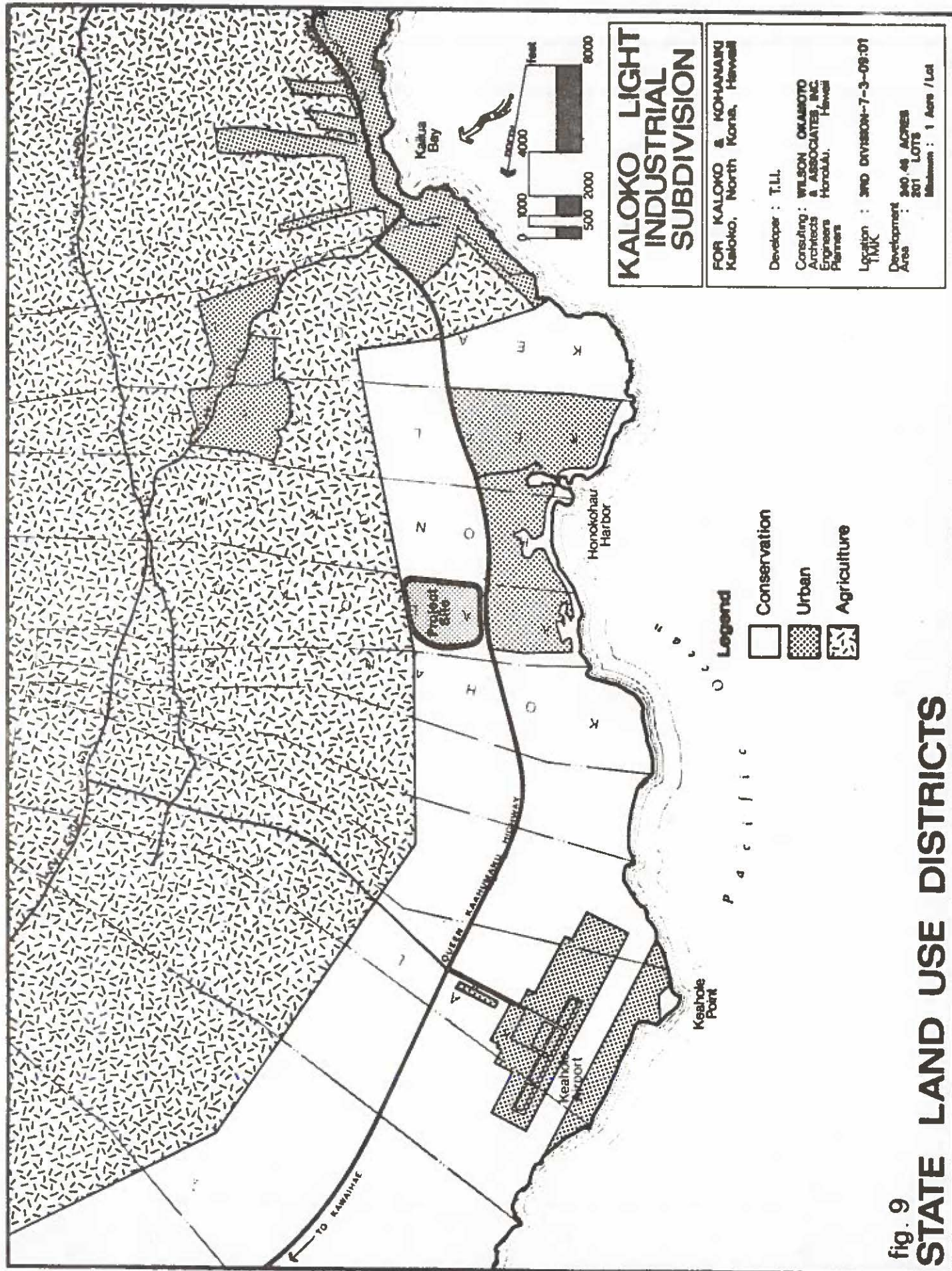


fig.8
Phasing



In addition, there are Resort designations at Kaupulehu, Kaloko and Kealekehe. Industrial designations occur at Ke-ahole Point, Kealakehe mauka of the Queen Ka'ahumanu Highway, and at Keahuolu on the makai side of the Highway. Alternate Urban Expansion designations overlay a portion of the Extensive Agricultural and Conservation designations along the mauka side of the Queen Ka'ahumanu Highway in Kealakehe and Keahuolu, and along the makai side of the highway at Kaloko, Honokohau and Keahuolu.

Above the coastal lava plain, the lands are designated Extensive Agriculture, Orchards, and Conservation. Low and Medium Density Urban designations and Alternate Urban Expansion areas exist along Palani Road and Alternate Urban Expansion along the Belt Highway from Kaloko to Hamanamana.

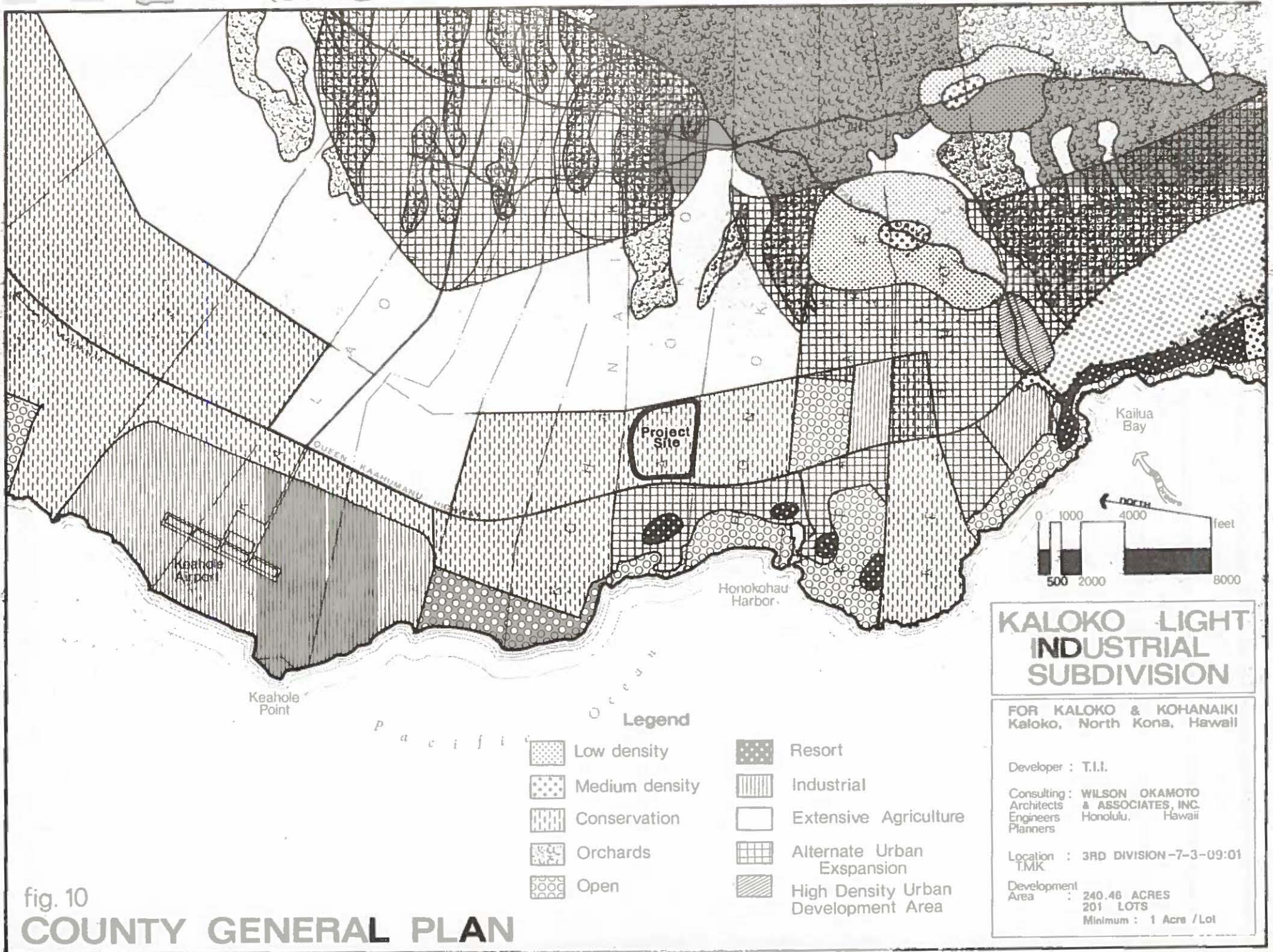
Beyond the Land Use Pattern Allocation Guide (LUPAG) Maps, the General Plan has many goals, policies and standards among its 12 elements applicable to development in this region.

The Property is in the County General Plan Conservation designation. The proposed light industrial subdivision is allowed only within the County Industrial designation. (See Figure 10.) An application to amend the County General Plan was acknowledged by the County on July 9, 1980. The amendment would change the designation of the Property from Conservation to Industrial.

3. County Zoning

County zoning includes Resort at the Kona Village Resort, and Industrial at the Ke-ahole Airport. The remainder of the coastal lava plain between Kiholo Bay and Kailua Village is within the Open zoned district from the shoreline to the mauka boundary of the State Land Use Conservation District. Above this the lands are within the Unplanned zoned district.

The Property is within the County's Open zone. Rezoning to a Limited Industrial zone (ML) is required for the proposed light industrial subdivision. (See Figure 11.)



III

Description of Existing Environment

A. Regional

The region of study includes portions of the northwest and west flanks of Hualalai; extending from Kiholo Bay on the north, to Kailua on the south, and from the shoreline to the summit of Hualalai.

Geologically, the entire area is comprised of Hualalai volcanic flows of which two (2) are historic. These include the 1801 flow to Ke-ahole Point and the 1800-1801 Kaupulehu flow.

Soils within the region include lava flows, thin organic soils and ash loams over pahoehoe and Aa lava. The lava lands predominate in the lower coastal area while the organic soils and ash loams occur upland and extend up to the lava flows and cinder lands found near the summit area.

Characteristic to the area also are the numerous brackish ponds found along the coast. These ponds are without direct surface connections with the ocean. Several are found along the coast within Kaloko ahupua'a. These anchialine ponds are indicative of the relatively porous nature of the lava flows. Additionally there are other brackish ponds formed through natural or man-made processes of bay enclosures. Two relatively large examples are located makai of the project site. These are Kaloko and Aimakapa, both of which have been used in the past as fishponds.

Topographically, the land along the coastal area up to Queen Kaahumanu Highway generally has slopes of up to five (5) percent. Above the highway to elevations of 1000 feet slope generally varies between six (6) and ten (10) percent while the area above the 1000 elevation the ground slope becomes progressively steeper until a slight flattening occurs near the summit area.

1. Climate

The climate of this area is semi-tropical and considered to be dry and arid with light rainfall. The average annual temperature is 75° (F) with an average high of 83° and an average low of 67°. Average annual precipitation at Kailua is 25 inches.

The area is shielded by Mauna Kea, Mauna Loa, and Hualalai from the strong prevailing pattern of the northeast trades which accounts for its dependable mild climate, bright sunshine and gentle breeze throughout the year. The Kona Coast has an alternating land-sea system of convection

current air circulation caused by differential heating of the land and water masses. The prevailing pattern is on-shore winds in the morning and early afternoon, often collecting in a cloud bank at the higher elevations, before returning to offshore breezes in the late afternoon and evening. The convectional air currents along the leeward coast also generate rainfall by drawing moisture laden air from the shoreline up the shore to higher elevations, where cooler temperatures result in condensation.

Typical wind velocities range between 3 to 14 knots. Relative humidity is also generally stable year-round, the daily average ranging from 71% to 77%.

2. Population

The North and South Kona districts are estimated to have a total population of 19,700 people based on preliminary census counts for 1980. This constitutes approximately 21% of the total 92,200 residents of the County of Hawaii. The North Kona district is estimated to have approximately 13,800 persons while 5,900 persons are estimated to reside in South Kona. These population levels represent significant increases over the 1970 census counts of 4,832 and 4,004, respectively. Overall, the Kona population more than doubled between 1970 and 1980. Most of the population growth during the past ten years has occurred in North Kona, which was the fastest growing district in the County of Hawaii. The North Kona resident population increased at an average annual rate of 18.5% compared to the South Kona rate of 4.8% and the County wide rate of 4.2%.

The rapid population growth can largely be attributed to the development of the visitor industry. From 1971 to 1980 the inventory of visitor accommodations for Kona more than doubled, from 1,842 to 3,774 units. This growth has brought increased job opportunities within the visitor industry itself in hotel, food service, retail services, transportation, and entertainment, and has indirectly affected the secondary industries which serve the needs of the visitor industry. In addition, the increasing work force has created added needs for services to the residents.

A related increase has also occurred in the construction industry. While the rate of construction can be related to the functional needs of the visitor industry and the expanding community, it is also related to the increased investor interest in resort condominiums units along the Kona coast.

3. Economics

Presently, Kona's three basic industries are tourism, agriculture, and construction. Tourism is currently the dominant industry in Kona, and has the greatest potential for the future. The rapid growth of tourism in North Kona resulted, in a large part, from the State's emphasis on developing the west Hawaii coast into the island's major resort area. The resort uses are located in the coastal areas from Keauhou to Kailua, and in Kaupulehu shifting a large proportion of the basic economic activities makai and northward of the coffee belt.

According to data from the Hawaii Visitors Bureau, the number of visitors to Hawaii County steadily increased from 1970 to 1978. However, declining visitor counts have been recorded in the past two years, reflecting a Statewide slowdown in the visitor industry. There were approximately 762,700 westbound visitor arrivals in Hawaii County in 1980, a decrease of 11% over 1979. The 1980 average visitor census was 7,210. As of October 1980, approximately 3,770 visitor units (hotels and resort condominiums) were existing in the Kona area. This represents about 60% of the islandwide inventory. Despite the recent slowdown in tourism, the industry is expected to continue as the dominant growth industry in Kona.

The total number of arrivals and departures at Ke-Ahole Airport was 1,253,377 in 1978, a four-fold increase since 1967, and nearly a fifty fold increase since 1950.

Agriculture has long been a part of Kona's economic life. The agricultural uses included cattle ranching, orchard crops, and truck crops, and have tended to locate in the mauka areas where the soils, rainfall and climate were more conducive to such activities. As a result, the settlement pattern reflects a mauka bias.

Kona's agricultural efforts cover a wide variety of crops due to the unique climate conditions, topography, and soils of the district. Despite Kona's generally favorable condition, factors such as Hawaii's relatively small population, distance from markets, and the cost of production, including labor, have made many agricultural crops unprofitable. The most important crop of the district has been coffee, however, this industry has dramatically decreased in total revenue during the past 18 years due to a change in economic patterns. The forecasts indicate a continued long-term decline.

The construction industry is strongly inter-related with tourism and other businesses. Hotels, housing, roads, and offsite construction are continually in progress to keep up with the increasing demands exerted by tourists and residents. South Kohala, only a 30 minute drive from the Kona area and highly dependent on the Kona area for tourism industry supportive activity, is anticipating a very large increase of hotel rooms over the next 10 years.

The settlement pattern has also shifted northward as evidenced by the 1970 to 1980 population changes mentioned previously. This shift is coincident with the construction of relatively large commercial development in Kailua while the traditional mauka commercial centers have had limited expansion. Clearly, however, this shift in the settlement and commercial pattern has had many other influences including land availability, transportation modes and routes, water availability and personal preferences.

The coastal lava plain north of the old Kona Airport to Ke-ahole includes a number of urban-like improvements.

- County Solid Waste Landfill and an Animal Pound
- Terminal Freight Facility
- Quarry and Baseyard
- Quarry and Concrete Batching Plant
- Ke-ahole Airport
- Natural Energy Laboratory of Hawaii (NELH)
- State Agricultural Park at Ke-ahole

In addition to the existing developments, there are other planned or proposed developments north of Kailua Village, including:

- Natural Cultural Park at Kaloko/Honokohau
- County Regional Sports Complex at Kealakehe

4. Employment

The largest employer in North Kona is the service-industry related sector. Approximately 60 percent of the jobs are in hotels, real estate, recreation and amusement facilities, repair services, personal services, and professional services. This figure supports the fact that tourism in North Kona is a major industry. This is further evidenced by the number of hotels and shopping complexes that have been recently built in Kailua and Keauhou.

Retail trade is the second largest employer in the region, representing 20 percent of the area's employment. This is to be expected considering its complementary relationship to the tourist industry. Federal, State and local government represents nine percent of the employment, while other employment sectors each represent three percent or less, including agriculture which employs less than one percent of the total work force.

The unemployment situation on the Big Island appears to be improving. The unemployment rate has decreased over the past few years, from a peak of 11.4 percent in 1976, to the 1979 rate of 8.1 percent. In 1979, the unemployment rate of 7.0 percent for the North Kona area was slightly lower than the countywide rate.

5. Housing

The region's residential settlements are located predominantly in the mauka area, a mile or two above the resorts. Most of these communities have grown around older settlements strung along Palani Road and the Mamalahoa Belt Highway. Residential homes have also been developed along the coast between Kailua-Kona and Keauhou. However, the latter are mostly condominium units which are usually investment properties and second homes, rather than primary owner-occupant homes.

The number of housing units in North Kona in 1976 was 4,451--over a 100 percent increase since 1970 (County of Hawaii Data Book, 1979). In 1976, the composition of types of dwelling units was 64% single family dwelling units, 2% duplexes, and 34% multi-family dwelling units.

Currently, there is a critical shortage of housing in Kona. In a recent survey for the Kona-Kohala Regional Plan, over 50% of the respondents considered housing the most important problem facing residents of the area. The problem is not the availability, but affordability of housing.

6. Public Facilities

a. Schools and Libraries

The project area is serviced by Kealakehe School, grades K thru 8, at the present time. The enrollment at Kealakehe has increased substantially to a level where a new elementary school is deemed to be necessary.

The Department of Education has established a long-range plan for new schools in the area within the next ten years as follows:

<u>School Site</u>	<u>Grade</u>	<u>Opening Date</u>
Kailua-Keauhou	K - 6	1982
Kealakehe	7 - 9	1981 - 1985
Kealakehe	10 - 12	1981 - 1985

The purpose of the Kailua-Keauhou Elementary School would be to provide relief to Kealakehe School. There are presently three libraries in Kona located in Kailua, Holualoa and Kealahou. The Kailua Library is very limited due to its size. (See Figure 12.)

b. Police Protection

Police protection is provided through the County of Hawaii Kona District Headquarters located in Captain Cook. The District police force covers about 78 miles of roadway for North and South Kona. This area is the responsibility of a total staff of 42: 1 captain, 2 lieutenants, 4 patrol sergeants, 7 detectives, 28 motor patrolmen, and 2 office personnel.

Planning is underway for a new facility in Kailua-Kona to serve as the future district headquarters. The building will be located adjacent to the present Kailua Fire Station, off Palani Road. This facility will not be completed for at least another two years. (See Figure 12.)

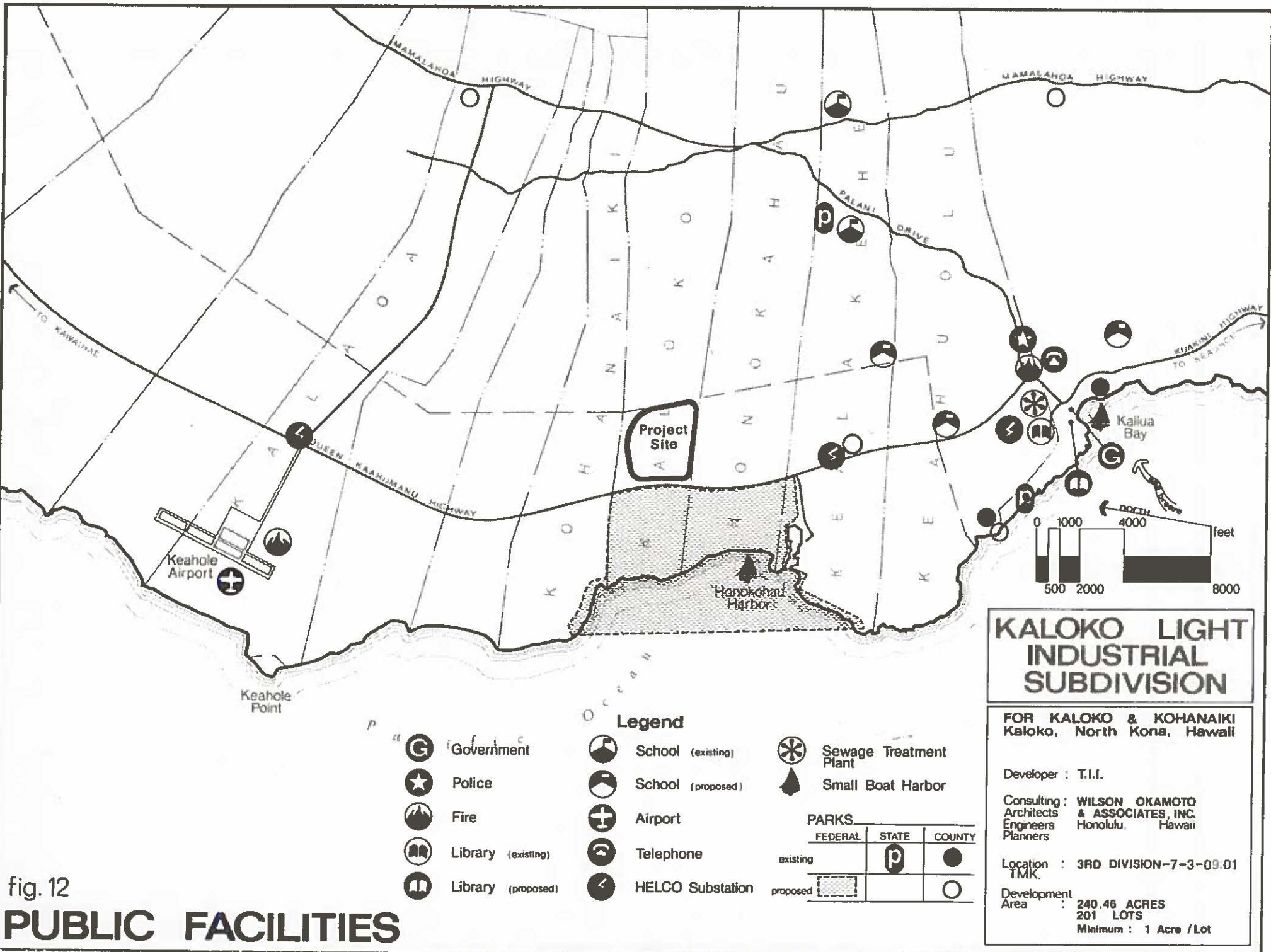
c. Fire Protection

Fire protection is provided by the Kailua Station located on Palani Road above the Queen Kaahumanu intersection. The Kailua Station is presently staffed by 16 fire fighters (working in three shifts or platoons). Equipment includes one rescue van, one tanker, and two triple commission pumpers. A fire station is also located at the Keahole Airport. (See Figure 12.)

d. Health Care

The new 83-bed Kona Hospital has been completed and is located near the State Department of Health's administrative office in Kealahou. The facility provides medical service to residents in the area.

fig. 12
PUBLIC FACILITIES



e. Solid Waste

There are four solid waste disposal sites which serve North Kona, three of which operate as open pit dumping and one operates as a transfer point for a container which hauls its load to the Kailua dump. The "Solid Waste Disposal Plan for the County of Hawaii" prepared in 1970 recommended that rubbish dumps be eliminated, and that transfer stations and sanitary landfill sites be established in accordance with the needs of the communities. A new landfill site is planned North of Ke-Ahole Airport and is presently being actively studied.

f. Government Operations

The new civic center complex is located in Captain Cook. The County of Hawaii "Kona Service Center" is located about one-half mile north of the aforementioned complex.

g. Parks and Recreation

Recreational facilities in Kona are provided by all three levels of government. The Hawaii Volcanoes National Park and the City of Refuge National Historic Park are both under the jurisdiction of the Federal Government. The U.S. Department of the Interior, National Park Service is planning to establish the Kaloko-Honokohau National Cultural Park, makai of Queen Kaahumanu Highway.

The State and County provide parks and other active and passive recreational facilities in the area. A major recreational proposal is the County Regional Sports Complex at Kealahou. (See Figure 12.)

h. Transportation Facilities

The Property fronts Queen Kaahumanu Highway, which is a high speed primary arterial between Kailua and Kawaihae and serves as one of three intercommunity transportation routes out of Kona. It also provides Kailua and the lands south with their closest link to interisland air and ocean transportation. This highway is proposed to be extended south from its present terminus at Palani Road to a direct linkage with Kuakini Highway by-passing the Kailua commercial area.

Queen Kaahumanu Highway is a two-lane, class I State Highway, designed for a 70-mile per hour vehicle speed. It is a limited access highway within a 300-foot right-of-way. Mamalahoa Highway, which was formerly the main road between Kailua-Kona and Kamuela, is five miles inland, at an elevation of 800 feet. The County of Hawaii operates a bus system which offers twice-daily service between Kona and Hilo.

Ke-Ahole Airport located approximately 4 miles north of the Property along Queen Kaahumanu Highway, is a new jet airfield presently utilized for inter-island airline service only. The modern facilities at the airport consist of a terminal building complex and a single runway 150 feet wide and 6,500 feet long. A second runway is planned at some future date, as determined by demand placed on the existing facilities. (Ke-Ahole Airport Master Plan, Airports Division, State of Hawaii, Department of Transportation, 1971).

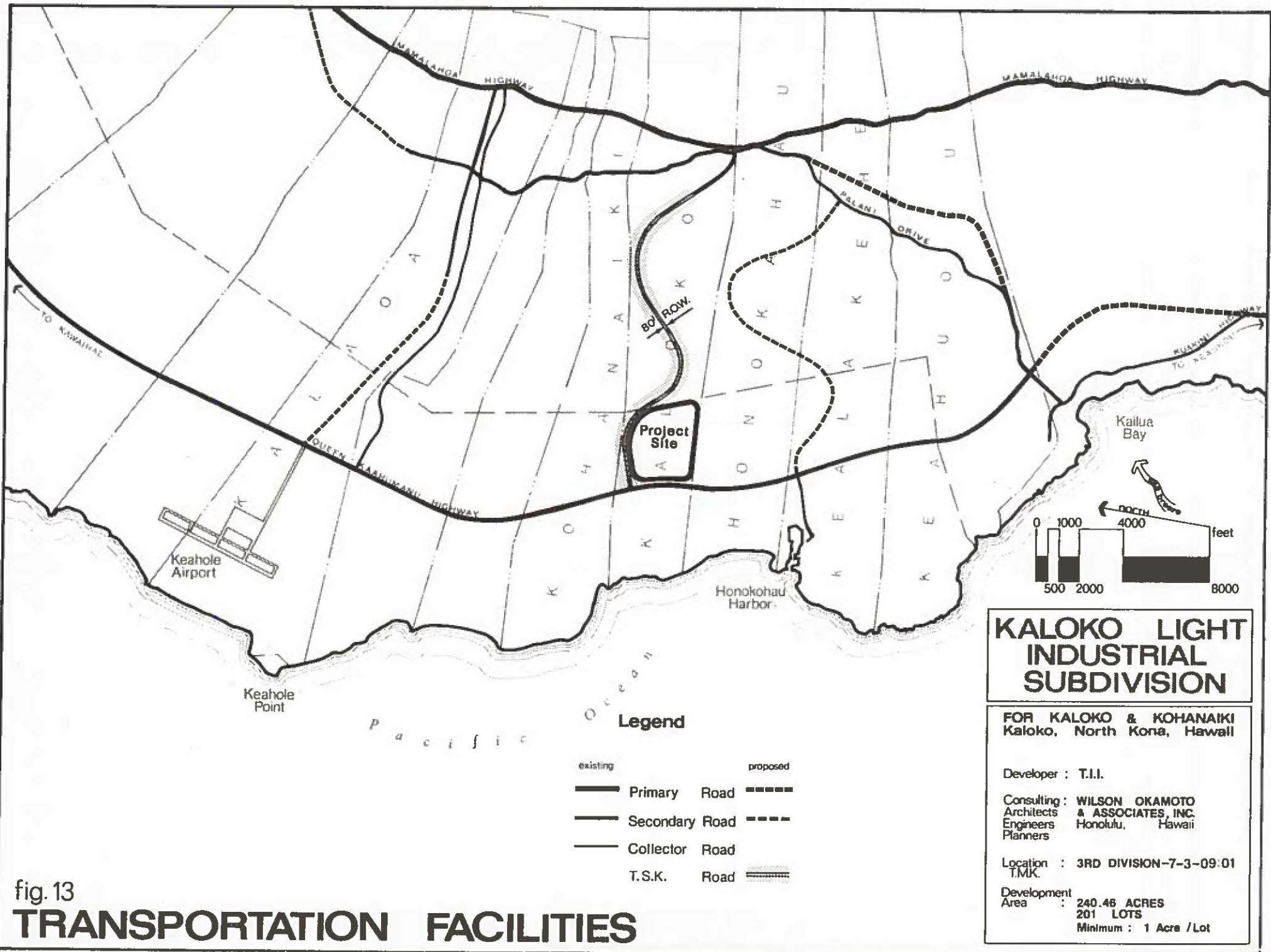
Kawaihae Harbor, 25 miles north of the Property, has a 40-foot deep entrance channel and a 35-foot deep harbor basin with an area of 53.8 acres. This new harbor provides the only port facilities for deep draft vessels on the west side of the island. (See Figure 13.)

7. Community Character

Kona has been characterized in the past as a place of gentle, contrasting beauty, and as a place for peaceful relaxation. Although these values still exist, the districts of North and South Kona can presently be described as a peaceful agricultural area undergoing rapid transition toward urbanization. Although still basically "rural" in atmosphere, the area is experiencing a major transition from an agricultural to a tourism economy. These changes are most evident in the immediate vicinity of the town of Kailua and in Keauhou, North Kona.

The following Village Design Goals for Kailua Village are excerpted from the Kailua Village Design Plan, County of Hawaii, July 1976.

- o To maintain and improve the Kailua Village atmosphere as a "slow-moving, natural, casual, relaxed, low-rise" village.
- o To continue the traditional role of Kailua Village being the major tourist destination and retail shopping center of Kona.



The major changes which have occurred in North Kona can be seen by examining the population trends. As the region rapidly developed, the major employment shifted to construction and tourism activities, and a major new population segment consisting of young caucasians from the mainland have moved into North Kona in large numbers to meet the employment needs.

8. Visual/Scenic

Viewed from Queen Kaahumanu Highway, the landscape is one of a dominant, black and brown expanse of lava flows in the foreground, with a scattering of non-conforming urban uses between Ke-ahole Airport and Kailua Village. Westerly views of the coastline, ocean, and horizon provide a vast open background upon which the lava forms and occassional vegetation are detailed.

Viewed from Mamalahoa Highway, the panorama of the region as a whole can be seen. Far distant views of horizon, ocean, coast, flat lava plains and slope give the sense of both the diversity and unity of the area.

B. Site

1. Topography

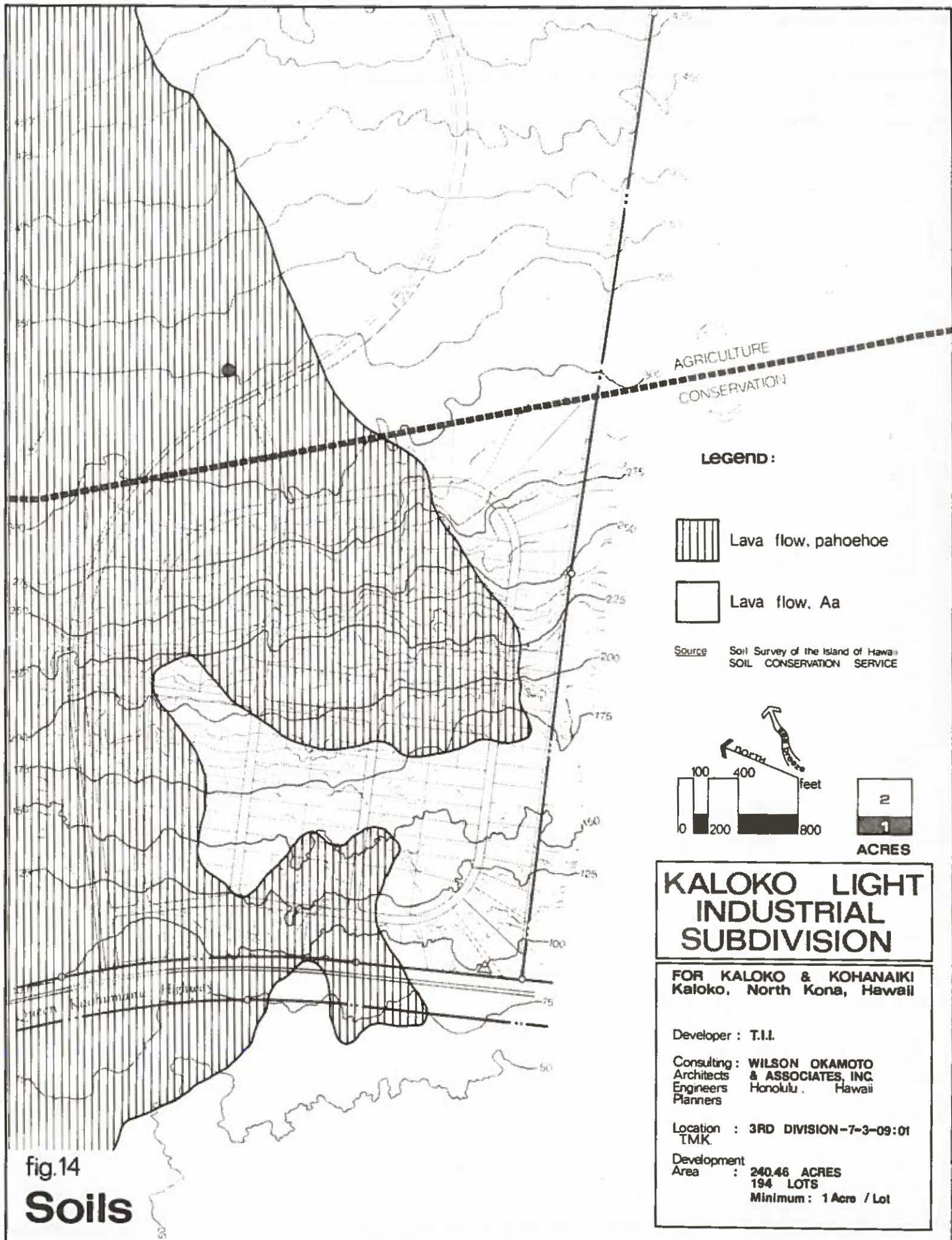
Elevation of the Property ranges from 100 feet above mean sea level along the makai boundary (Queen Kaahumanu Highway) to 300 feet along the mauka (east) boundary.

The Property slopes gently mauka to makai (east to west) ranging from 5 percent to 10 percent. The Property has a generally irregular surface with localized mounds and depressions present throughout, as is characteristic of non-eroded lava flows.

2. Soil

The detailed Land Classification for the Island of Hawaii prepared by the Land Study Bureau of the University of Hawaii and published in November 1965, classifies soil on the Property as type #289 and E319. The E classification means that the land is very poorly suited for agricultural purposes. (See Figure 14.)

Also, the Soil Survey of the Island of Hawaii, State of Hawaii prepared by the Soil Conservation Service of the U.S. Department of Agriculture in cooperation with the Agriculture Experiment Station of the University of Hawaii,



published in December 1973, describes the soils of the Property as part of a soil group classified as lithosol (a soil lacking definite genetic horizons, consisting of a freshly or imperfectly weathered mass of hard rock or hard rock fragments).

The Property is composed almost entirely of basaltic rock. The lava flows are "pahoehoe" and "aa" lava, the latter which has extremely rough, irregular and clinkery surfaces, is black to greyish in color and closely resembles heavy cinders or coal. The flow units are light and seemingly brittle, yet remarkably capable of withstanding various forces. The "pahoehoe" lava is characterized by small, low, and broad outcroppings with smooth and ropey surface features. The pahoehoe flows are composed of a series of thin, overlapping flow units separated by distinct interfaces which are characterized by red to brown oxidized surfaces, highly vesiculated and fractured. In general, the site has the irregular surface associated with uneroded lava flows. The lava material is very friable and can usually be graded using conventional earth moving equipment.

Both studies indicate this area as being generally unsuited for agricultural use due to low precipitation and lack of soil material.

3. Flora and Fauna

Vegetative patterns in the North Kona region generally follow rainfall patterns. They are, however, also influenced by soil conditions, and groundwater supply. Inland, the Kekaha plains vegetation is limited to grasses and occasional Keawe.

The flora and fauna of the Property can be reasonably assumed to be similar to the inland area described by the Ke-Ahole Environmental Impact Statement for the Natural Energy Laboratory of Hawaii, December 1976. General proximity (within three miles), and similarity of elevation, topography, and climate, would validate this assumption.

The inland section described by the Ke-Ahole EIS and the proposed Kona Airport Industrial Park Subdivision are part of the "old lava zone" which is characterized by sparse dry grasslands and herbs. Fountain grass is predominant along with small amounts of Hialoa, Sword Fern, Klu, Red-top grass, and Caper. (See following list.)

<u>Hawaiian Name</u>	<u>Scientific Name</u>	<u>Status</u>
Fountain grass	<u>Pennisetum setaceum</u>	Exotic
Red-top grass	<u>Rhynchelytrum repens</u>	Exotic

Sword fern	<u>Nephrolepis beserrata</u>	Exotic
Caper	<u>Capparis sandwichiana</u> var. <u>Zoharyi</u>	Endemic
Hialoa	<u>Waltheria americana</u>	Indigenous
Klu	<u>Acacia farnesiana</u>	Exotic

None of the above listed plants were included in the U.S. Department of the Interior Fish and Wildlife Service, Proposed Endangered and Threatened Species Plant List (Federal Register, Wednesday, June 16, 1976).

Although not included in the Ke-Ahole EIS, it is possible that certain other endemic species of flora such as ohe, and halapepe, and indigenous species such as alahe'e, may exist in the region.

A wildlife survey completed for the Ke-Ahole EIS did not record the observation of any endemic Hawaiian birds. Two species of endemic Hawaiian birds, however, are known to frequent the general area. The endangered Hawaiian Stilt (Himantopus mexicanus knudseni), is known to be present in the pond areas along the Kaloko and Honokohau coast line.

The other endemic species is the Hawaiian Owl (Asio flammeus sandwichensis), which is known to be present in the area of the Property. Indigenous birds observed during this survey were the Golden Plover (Pluvialis dominica fulva), Wandering Tattler (Heteroscelus incanus), and Ruddy Turnstone (Arenaria interpres). A number of other introduced birds are present including the Indian Grey Francolin, Barred Dove, Common Mynah, Japanese White-eye, House Finch, House Sparrow, Cardinal, and Brazilian Cardinal. Most of these species were observed along the coastal zone.

The presence of mammals such as the Mongoose (Herpestes auropunctatus), House Mouse (Mus musculus domesticus), Black Rat (Rattus rattus), Polynesian Rat (Rattus exulans hawaiiensis), and Feral Cats (Felis catus) is possible.

4. Archaeological and Historical

Lloyd Soehren, consulting archaeologist, has conducted an archaeological reconnaissance survey of the Property. (See Appendix A.), and reports findings of three sections of a stepping stone trail and two lava tubes which may have been utilized either as temporary shelters or refuge. No historical or archaeological sites listed on the State or Federal Historic Registers exist within the Property.

The U.S. Department of the Interior proposes to establish the Kaloko-Honokohau National Cultural Park, a portion of

which is directly across the highway (makai) from the Property, to preserve Hawaiian culture at a location containing numerous archaeological and historic sites. The Honokohau Settlement Historic District encompasses those portions of Honokohau, and Kaloko Ahupua'a makai of Queen Kaahumanu Highway. This Historic District has been on the National Register of Historic Places since 1966. At this time, however, no land acquisitions have been made by the Federal Government.

In describing the Honokohau Settlement, the proposed Kaloko-Honokohau cultural park EIS states:

"By far the most significant of the sites are Kaloko, 'Aimakapa, and 'Ai'opio fishponds, the built-up track for the chiefly sport of sledding holua, and the several heiau located between Wawahi Wa'a Point in Ko-hanai-ki and the 'Ala'ula Bay area in Ke-ala-kehe. The two most important of these heiau were probably Heiau Hale O Lono on 'Ala'ula Bay and Pu'u'oina, a rock platform south of the 'Ai'opio fishpond."

"...Kaloko is a natural embayment separated from the sea by a man made sea wall. It covers approximately 11 acres, with secondary walls within the pond forming three separated areas where fingerlings were raised or where different species of fish were kept. Kaloko Pond is an excellent example of the engineering skills of the ancient Hawaiians. It has the largest and thickest man made sea wall and is the last and most impressive example of a loko kuapa type pond on the Island of Hawaii."

"...Another aspect of the cultural significance of Kaloko is the belief that the entire region was traditionally under the jurisdiction and rule of the Kahuna chiefs, and matters relating to religious practice have been associated with the area. The native historian, Kamakau, described a kuni ceremony at Kaloko ..."

"In addition, Kaloko Pond is also held in high respect because of the Mo'o said to be the guardian spirit of the pond and its use. It is also said to be the burial place of several numbers of the Kamehameha family."

"...There are also numerous other sites whose significance should not be de-emphasized. These sites include the mauka-makai trails, Kahua hale (house platforms), Ko'o (fishing shrine), ahu (stone mounds thought to be an altar, shrine or security tower), a concentration of more than 100 stone enclosures securing as agricultural planters, lava tube shelters, canoe landings and shelters, salt pans, petroglyphs, and papamu (konane game boards)."

"...Seen in its total perspective, the Hono-ko-hau Landmark area is archaeologically valuable as a potential place for studying the activities of pre and early-contact Hawaiians, and the changes which occurred in subsistence patterns and land ownership upon the arrival of a different culture. For Hawaiians, it represents a place where important ancestors lived, died, and are buried. It is therefore, invaluable in terms of their heritage."

5. Drainage

The natural drainage system consists of rainfall percolating through the layers of very porous lava to the underground water table. This is evidenced by the topography having no defineable streams. There is no record of flooding in this area.

The Property is not within the flooding or tsunami inundation areas identified by the preliminary Flood Insurance Rate Maps prepared by the U.S. Department of Housing and Urban Development, Federal Insurance Administration (FIA), 1978.

6. Utilities

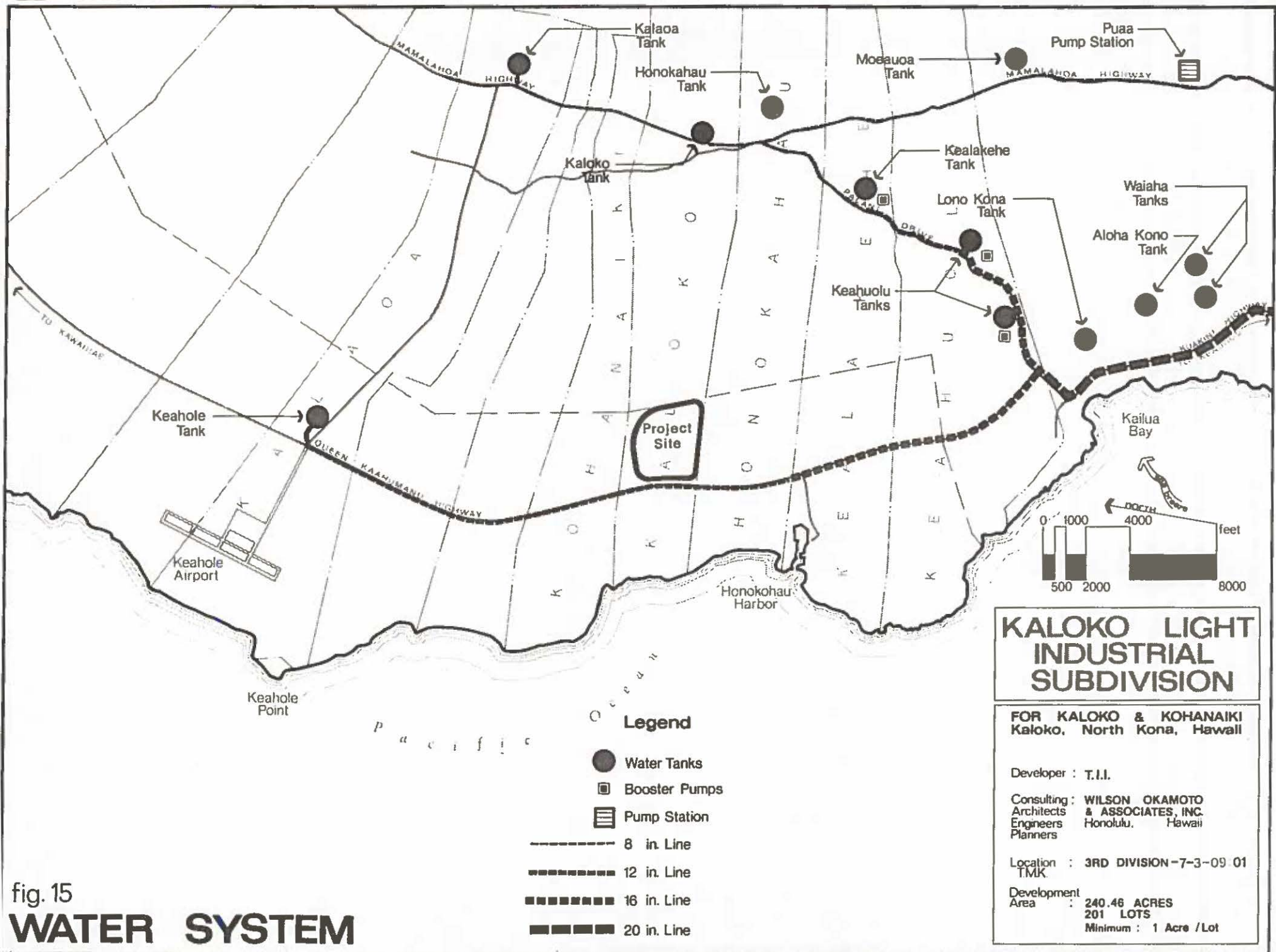
a. Water

The present source of the Hawaii County Department of Water Supply system consists of four deep wells, designated as the Kahalu'u Wells A, B, C, and D with a total safe yield capacity of 4.5 MGD and a Maui shaft with a safe yield of 6 MGD. The maximum safe yield of the aquifer of the Kailua-Kona region is estimated to be at 10 MGD.

The County is currently undertaking a program to replace the 8-inch transmission line along Kuakini Highway, from the existing pressure reducer at elevation 300 to Palani Road with a 20-inch line. Two phases are required to install the new line. Phase One completed in February 1981, and Phase Two is scheduled for completion in December 1981 (County of Hawaii, Department of Water Supply, April, 1981).

The County has 16-inch and 12-inch transmission lines currently in place along Queen Kaahumanu Highway, extending to Ke-Ahole Airport. (See Figure 15.)

Water services to the property are available from the existing 12-inch line along Queen Kaahumanu Highway. There will be no additional investment by or cost to Hawaii County to provide water service to the proposed



light industrial subdivision. The water system for the proposed subdivision has been designed to improve the reliability and stability of the County water system for the area by providing an alternate source or alternate alignment for water service in the event an existing water supply from a tank to a service level is impaired. These improvements will greatly enhance the County water system for the general Kailua-Kona area at no cost to the County.

b. Sewage Disposal

Cesspools are the primary means of sewage disposal throughout the Kona area, since population densities outside of the urban center are generally low. Approximately 1,000 cesspools within the Kona area dispose of an estimated 0.3 million gallons per day (mgd).

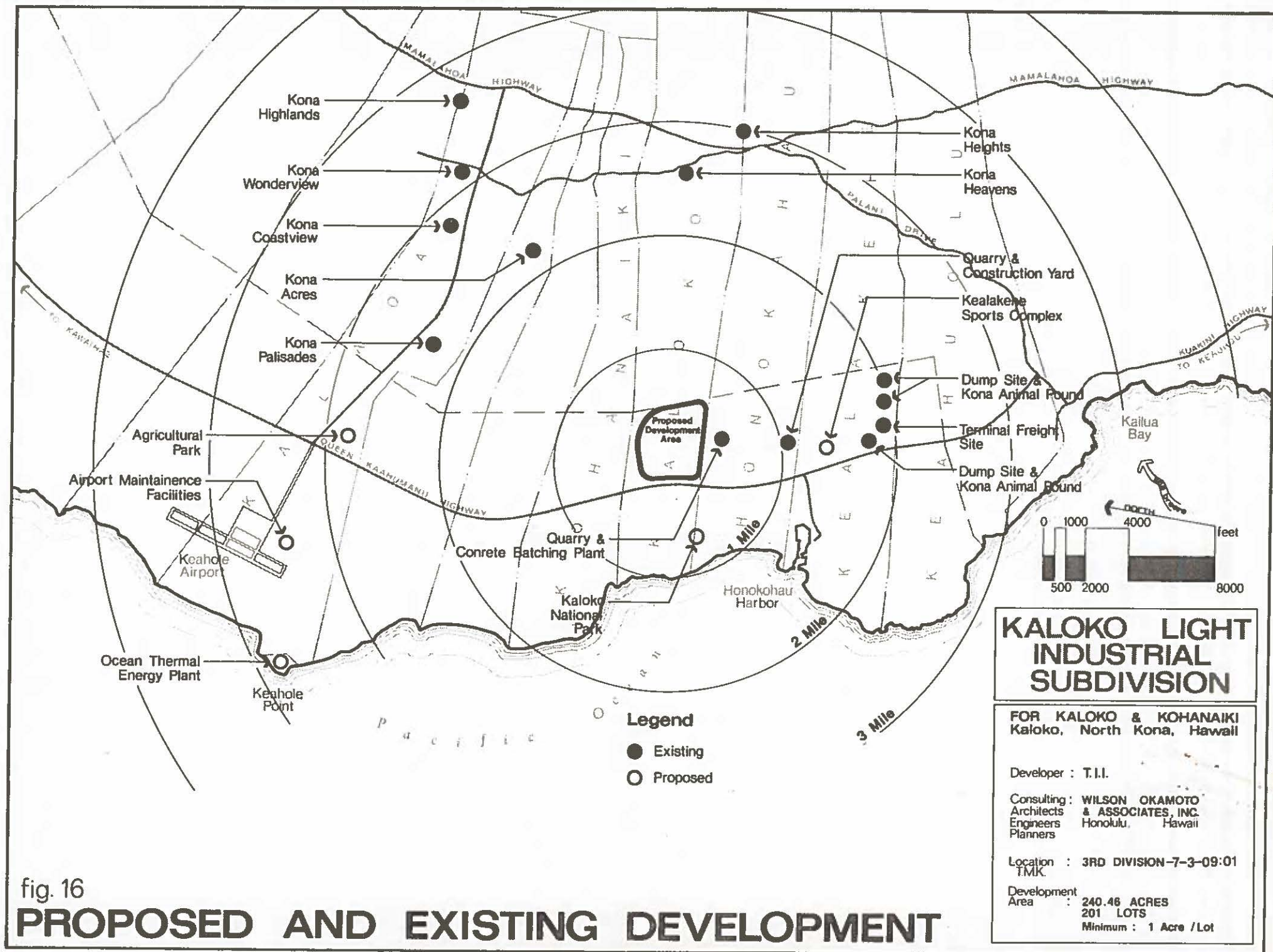
The only areas that have sewage collection, treatment and disposal systems are the Ke-Ahole Airport and the urban area of Kailua-Kona town. The Ke-Ahole Airport plant, maintained by the State of Hawaii, is a 0.04 mgd package treatment plant at the airport which accepts sewage from the airport facilities, provides secondary treatment, and disposes the effluent into two seepage pits.

The County of Hawaii owns and operates a 1.0 mgd conventional secondary sewage treatment plant (STP) which serves the urban center of Kailua-Kona. The plant was originally built in 1965 and was subsequently expanded to its present capacity. The treated effluent is used to irrigate the County and State parks at the old Kona Airport. There are continuing concerns about odors from the plant which is located in the center of the existing Kona industrial area, increasing maintenance problems, and low operating efficiencies.

A new County sewage treatment facility is being planned on State land near the Honokohau small boat harbor; however, no sewer line is planned along Queen Kaahumanu Highway.

c. Electricity

Kona has an above average growth rate of electrical demand. The Hawaii Electric Light Company (HELCO) is the only public utility franchised to provide



electrical energy on the Island of Hawaii. Its main generating facilities are located in Hilo, with several minor plants at locations around the island. The Kona sub-stations have a capacity of 21.1 MW (December 1976). A 69 KV overhead transmission line is located along Queen Kaahumanu Highway. This line runs between Kailua-Kona and Waimea, and connects to the major generating facilities in Hilo. Substations exist near Ke-Ahōle Airport, and at Kealakehe and at the Kona Industrial Subdivision.

IV

Potential Impacts

A. Modification of Land

Clearing, grading and subsequent improvement will extensively alter the natural condition of approximately 240 acres of land. Land transformation activities are required, however, to prepare the barren lava land for the proposed economically productive usage. Every effort will be made to work with existing ground contours.

B. Geologic/Soils

1. Seismic

Seismic activity in the Kona area is relatively common, but most of these quakes are small and do little or no damage. Therefore, the possible impact of seismic activity is not deemed to be significant. All buildings will be "low-rise" and built in conformance with provisions of the County's Building Code for Seismic Zone 3.

2. Existing Soils

The soils within the Property generally consist of pahoe-hoe and a'a lavas. The area is well-drained with shallow soil cover over the lava base. The existing soil characteristics have been found to be ill-suited for conventional cultivation, as well as having a limited carrying capacity for grazing and wildlife.

It should be noted, however, that although the soil composition is generally unfavorable, there may be a potential for certain very limited types of specialized agriculture, requiring modifications to the existing natural environment.

C. Air Quality

1. Long Term

The principal air quality impact of a project such as proposed herein is clearly related to the vehicular traffic generated by it. A light industrial area without any major stationary emission sources could be considered an "indirect" source of air pollution because it attracts vehicles.

Annual emissions of carbon monoxide (CO), nitrogen oxides (NO_x), hydrocarbon (HC), and lead (Pb) will all be greater with the project than without the project.

According to the Environmental Impact Assessment for Kona Industrial Subdivision Expansion and Commercial Development, prepared by Belt, Collins and Associates, December 1979, the development of 100 acres for a light industrial subdivision, and 75 acres for a regional shopping center will exceed State Standards for carbon monoxide (CO) concentrations in a few locations under worst-case meteorological conditions.

Light industrial activities occurring within T.I.I.'s proposed light industrial subdivision, will not have a significant impact on air quality. The State Department of Health, Public Health Regulations, Chapter 42, Ambient Air Quality Standards, will be complied with.

2. Short Term

The principal source of short-term air quality impact will be construction activity. Construction vehicle activity will increase automotive pollutant concentrations along the main access roads and highways serving the Property. Increased truck traffic on such roadways may reduce service level, and lower average operating speeds, which also contributes to higher emissions. Site preparation and earth moving will create particulate emissions, as will building and on-site road construction. Construction vehicle movement on unpaved on-site roads will also generate fugitive dust emissions. Continuous dust-control measures will be employed to avoid violations of State and Federal particulate standards downwind of the project sites.

D. Acoustical

Despite some noise level increase caused by the new activities within the Property, the industrial subdivision is not anticipated to adversely affect surrounding land uses, and existing activities.

Adequate distance separates the proposed light industrial subdivision from the nearest noise sensitive neighbors. The nearest residential areas are located approximately two miles mauka of the Property. The major facilities planned for the Kaloko-Honokohau National Cultural Park are located near the shoreline, approximately one mile makai of the Property.

Noise generated by project-related traffic is expected to be dominated by non-project-related traffic along the highway fronting the Property.

E. Drainage

1. On-Site

On-site runoff water will be disposed of by catch basins, drywells, and drainlines that will ultimately empty into swales leading to culverts under the Queen Kaahumanu Highway. Also, drywells will be added under all terminal catch basins in order to enhance percolation and filtration of contaminants into the substrata, rather than have contaminants surface flow to the ocean. Specific design and percolation analyses will be completed prior to the siting and installation of final drywell systems. Since the Property is not in a groundwater recharge area, there will be no impact on the potable water supply.

During a storm, the initial runoff is usually the most contaminated. Small flows and the initial flows from storms that may overtax the drywells would tend to have the contaminants filtered out into the rock strata at the drywells. Flows large enough to overtax the drywells would occur later in any given storm, and therefore tend to be less contaminated. The drywells should also effectively remove all large sediments that would otherwise be transported downstream.

Due to the nature of the layering down of lava flows and cinders, and the weathering processes between flows, effective filtration of contaminants can be expected on the Property from water percolating through the various layers of rocks, cinders, and soils. Lateral movement of run-off water to the shoreline may occur if a lava tube or void exists below the surface. However, the presence of lava tubes or voids can be determined by such methods as proof rolling, loading or use of a magnetometer. Although, no advance tests have been conducted to determine the presence of lava tubes or voids, all drywells will be closely monitored during construction, and any void or tube encountered will be sealed to preclude the lateral and unimpeded movement of storm waters through the rock stratum.

2. Off-Site

Storm waters produced off-site will be routed around the Property in accordance to County Department of Public Works requirements, by natural swale-like channels that will lead to existing culverts under the Queen Kaahumanu Highway.

F. Plant and Animal Life

Existing vegetation consisting of sparse growth of grasses, weeds, and shrubs will be cleared from the Property. No rare or endangered plant are known to exist on the Property. The vegetation on the Property will be changed by the construction activities. Native species such as ohe and halapepe are not uncommon to the region. However, these plants normally are found at elevations above 1,800 ft. The Property is at 100 to 300 ft. elevation and is not a normal habitat for these native species. Most existing plant materials will be replaced by new types of plant species in a landscaped environment. Impacts on the surrounding areas are not expected to be significant.

Impact upon fauna is expected to be minimal. Disturbance of habitat will result in relocation of existing fauna to adjacent undeveloped areas. No rare or endangered wildlife species are known to inhabit the Property.

G. Visual

The construction of facilities over the natural lava fields will cause visual impact. This impact, however, will be tempered by surrounding developments, both existing and planned, which have a similar impact upon the land.

Several factors are important to consider when evaluating the significance of the impact, such as the existing impact of surrounding improvements and the implementation of mitigation measures by the developer.

1. Existing Improvements Mauka of Highway

A number of improvements are existing or are proposed along the mauka side of Queen Kaahumanu Highway. The visual intrusion of urbanization and industrial-appearing improvements is established along the mauka side of the highway. The following list consists of existing improvements mauka of Queen Kaahumanu Highway, between Ke-Ahole Airport and Kailua Village. (see Figure 16.)

- a. The residential subdivisions north of Kailua Town in Kealakehe and Kalaoa, mauka of Ke-Ahole Airport. Kalaoa has the greatest number of subdivided lots in Kona according to the Kealakehe Regional Sports Complex Master Plan, County of Hawaii, 1976.
- b. Concrete Company Quarry and Batching Plant
- c. Shield Pacific Concrete Company Quarry with construction yard, office, and storage buildings

- d. County of Hawaii, Kealahou Dump Site and Kona Animal Pound
- e. Amfac terminal freight site
- f. Honolulu Gas Company tank site
- g. Ke-Ahole Agricultural Park
- h. Hawaii Electric Light Co. substation

2. Ocean Viewing Corridors

The coastal and ocean viewing corridors from Queen Kaahumanu Highway will not be affected by the proposed light industrial subdivision.

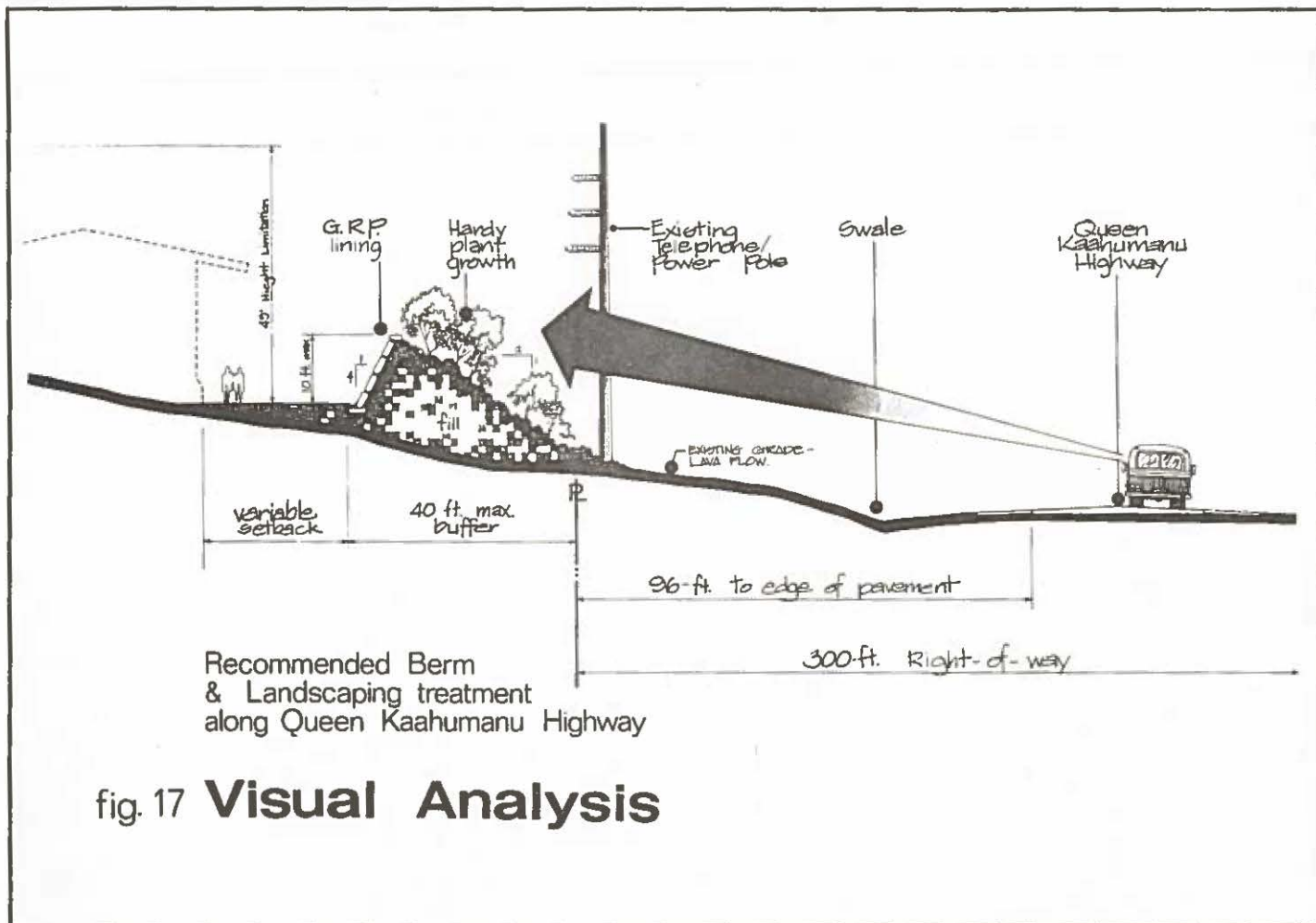
3. Mitigation

Visual impact analysis was conducted to determine the effect of the proposed light industrial subdivision as viewed from Queen Kaahumanu Highway. The maximum 45 ft. height limit within the Limited Industrial (ML) District, and the viewing plane from a bus window, the most elevated viewing plane, were used as impact parameters. Screening of industrial structures for both near and distant views for the benefit of travellers along Queen Kaahumanu Highway was the primary objective.

Findings indicate that the size of a berm which will completely block visual contact of the structures in the subdivision from the highway, would necessarily be of a height which would in itself constitute a major development and create significant adverse visual impacts.

In an effort to minimize the visual impact to motorists and passengers, a landscaped berm of moderate size will be implemented. The landscaped berm along the entire road frontage of the Property, will be part of the first phase of development. Landscaped internal roadways and screening of adjacent industrial development will be implemented with each development phase. (See Figure 17.)

Site and area landscaping can be a very effective way of improving the existing visual environment, and screening or softening unsightly views. Additional setback requirements along the perimeter of the subdivision could minimize impacts to surrounding areas. These requirements will be established in coordination with the County Planning and Public Works Departments.



Landscaping materials should be hardy, and require minimal maintenance. A landscaping master plan will be developed with County review and approval at the appropriate time. The plan will include:

- o Enhancement of the property frontage along the Queen Kaahumanu Highway.
- o Screening of industrial structures from travellers along the Queen Kaahumanu Highway.
- o Landscaping of internal roadways to screen adjacent industrial structures.
- o Use of canopy and shade trees to screen industrial structures from residential communities above the subdivision.
- o Establishment of a continuity of landscaping throughout the project.

The master landscape plans will be implemented in several ways. T.I.I. will generally undertake the planting of the industrial expansion area's peripheral landscape elements, including the highway and boundary screening. T.I.I. will also have prime responsibility for initially planting the street trees within the industrial subdivision. Individual tenants will be required, through deed covenants and other agreements, to provide and implement on-site landscape plans in accordance with the overall master landscape plan and maintain street trees. They will also be required to provide irrigation systems and meet other maintenance standards.

While it is not practical or economically feasible to require architect-designed industrial structures or establish rigid design guidelines, there are certain design and development guidelines which can be imposed on industrial developments to minimize potential adverse visual conditions, such as the use of exterior building colors that are compatible with the surrounding environment; the use of non-glare building materials; the screening of exterior storage areas; required on-site vehicle and equipment parking; and appropriate site landscaping requirements. These guidelines will be developed in coordination with the County Planning and Public Works Departments.

Signs and other graphic media can contribute substantially to the visual order or disorder of industrial subdivisions and other developments. Exterior sign and graphic design standards to encourage both quality and continuity of these elements within the industrial subdivision area will be utilized.

Landscaping, architectural design criteria, and other visual impact mitigative measures will be implemented through deed covenants.

H. Archaeological/Historical

The consulting archaeologist, Lloyd Soehren, has indicated that although there is evidence of early Hawaiian presence in the area, these findings are not of major significance. Populated areas were located closer to the coastal area and further inland near the present Mamalahoa Highway.

He further stated that the archaeological features identified are not unique, and require only proper documentation, before the proposed project can proceed. The project is not expected to have significant impact on archaeological features.

The lava tubes identified on the Property, as well as any other possible features discovered during the course of construction, will be examined by an archaeologist. If graves are found in a lava tube or elsewhere, provisions of Section 338-25.5 Hawaii Revised Statutes and Chapter 1 of Public Health Regulations, relating to disenterments, will be applicable. (See Appendix B.)

The proposed light industrial subdivision will not have an adverse effect on the proposed Kaloko-Honokohau National Cultural Park since adverse impacts on the fishponds or coastal waters will not occur. Furthermore, the Kaloko-Honokohau National Cultural Park, in addition to historical and cultural preservation programs, will also include exhibition and supportive facilities such as parking, roads, restrooms, exhibition halls, food service concession and transportation for visitors. A projection of 500,000 visitors a year is estimated for the park. The large volume of people and vehicles in this Cultural Park will affect noise levels, traffic congestion, water and air quality, and other environmental concerns.

I. Public Services

The subject property is located in reasonable proximity to basic services such as water, police and fire protection, and electrical and telephone utilities all of which are existing and available. The proposed industrial development will make maximum use of these existing services and facilities. Other necessary services and required improvements to existing services will be provided by T.I.I. at no cost to the Federal, State or County governments.

1. Electricity

Electrical power for the Property will be provided by the Hilo Electric Light Company. In the event existing power sources are not adequate or cannot be practically utilized, a substation of appropriate size will be constructed within the Property by T.I.I.

The following represents the projected light industrial subdivision electrical demand:

Initial	105 one acre lots @ 4,000 KWH/mo/Lot	= 420,000 KWH/mo.
Ultimate	194 one acre lots @ 4,000 WKWH/mo./Lot	= 776,000 KWH/mo.

The above estimates are based on individual lot requirements used in the Environmental Impact Assessment for Kona Industrial Subdivision Expansion and Commercial Development, prepared by Belt, Collins and Associates, December 1979.

2. Water Services

Existing water wells at Kahalu'u have sufficient capacity to service the proposed light industrial subdivision. The water storage and transmission systems, however, are adequate only for present demands in the Kona area. The Department of Water Supply has initiated improvements to install a 20-inch transmission line along Kuakini Highway. The two-phased project is scheduled for completion in December 1981 and will provide adequate water supply to the light industrial subdivision.

The light industrial subdivision would require approximately 2,200 gal/acre/day average (County of Hawaii, Typical Unit Water Demands, 1979), 1.5 x average daily for maximum day demand, and 3.0 x average daily for peak hour water use.

Estimated Water Usage (mgd)

	<u>Avg. Daily</u>	<u>Maximum Day</u>	<u>Peak Hour</u>
Initial 105 Lots (130+ ac.)	.29	.45	.86
Ultimate 194 Lots (240+ ac.)	.53	.79	1.58

The existing water tank serving the Kaloko area, is capable of servicing the initial 105 lots of the light industrial subdivision, after the new 20-inch line along Kuakini Highway is completed. The ultimate development of 194 lots will require the construction of pumps and storage tanks to service the areas above the 225-foot elevation within T.I.I.'s property at no cost to Hawaii County.

3. Liquid Waste

Individual lot owners will provide an acceptable private sewage system for their lots, which complies with State and County rules and regulations. Since tenants or owners are not known at the present time, use is not definable. However, uses will be restricted by deed covenants to prohibit activities producing effluents that are objectionable to the State Department of Health.

The quality and quantity of sewage projected for the proposed light industrial subdivision can be classified as generation of waste-water relating to human body wastes, therefore, private sewage disposal systems, such as cesspools may be utilized if the waste-water generated is less than 3,200 gpd per acre of development.¹

Light industrial sewage flow is estimated to be 1,760 gallons/acre/day (80% water usage).

The water quality of the near shore waters and the Kaloko fish pond, which will be an important feature in the Kaloko-Honokahau National Cultural Park, is of primary concern. However, the light industrial subdivision is located over a mile from the coast, and therefore, should not create any problems. Furthermore, due to the nature of the laying down of lava flows and cinders, and the weathering processes between flows, effective filtration can be expected from vertical percolation of effluent. Individual lot owners will be required by deed restrictions and/or Department of Public Works' regulations to seal voids or lava tubes found when constructing cesspools. If sealing voids or lava tubes is not practical, individual on-site treatment units can be utilized.

4. Solid Waste

Individual landowners or tenants will arrange for the collection and disposal of their industrial type solid waste. Initially, the County disposal area in Kealahou will be used, however, this facility is scheduled to be closed in the near future. A new landfill operation will be established north of Ke-Ahole Airport, and should have sufficient capacity to accommodate the solid waste generated by the operation of the proposed light industrial subdivision.

5. Telephone

Telephone services are available to the proposed light industrial subdivision.

6. Police

Police service is adequate and available. Planning is presently underway for the construction of a new police station in Kailua-Kona to serve as the future district headquarters.

¹Mr. Harold Matsuura, Chief Sanitarian, Department of Health, Island of Hawaii

7. Fire Protection

The fire fighting facilities at the Kailua Station are adequate to handle potential emergencies. Back-up from the Captain Cook Station and the Ke-Ahole Airport Station is available if necessary.

The Property will be developed in accordance with the standards of the County subdivision ordinance and the rules and regulations of the Water Board. Water service must be available to meet minimum fire flow requirements.

J. Public Facilities

There will be only a minimal impact on public facilities such as schools, parks, and libraries as the proposed light industrial subdivision will not generate a substantial demand for these services. The work force is expected to be primarily from the existing population.

K. Traffic

The proposed light industrial subdivision will not have significant adverse effect on the existing highway facilities. Following is a summary of the traffic analysis conducted for the proposed project (See Appendix C, Traffic Analysis).

In the analysis of traffic impacts, certain assumptions were made. An annual growth rate of 8% was used to determine future traffic volumes. This figure was obtained from the EIA for the Kona Industrial Subdivision, prepared by Belt, Collins and Associates in 1979.

It was also assumed that, of the estimated project generated traffic, 20% will head mauka or east and 80% will head makai or west, toward the Queen Kaahumanu Highway. An estimated 60% of this traffic will head south along the highway toward Kailua, and 40% will head north toward the Ke-Ahole Airport.

The Environmental Impact Statement for the Kuakini Highway Realignment, 1976, projects the following traffic volumes along Queen Kaahumanu Highway:

Year	Avg. Daily Traffic (ADT)	K Peak Hour Traffic (%) AM/PM	D Directional Distribution (%) AM/PM	T Trucks (%) AM/PM
1985	6,450	9.0/10.0	55/45	12.0/9.0
1995	9,310		50/50	

The following traffic capacity analysis for Queen Kaahumanu Highway is based on data and tables from the Highway Capacity Manual 1965, Highway Research Board Report 87, Washington, D.C.

Prevailing conditions capacity, not considering intersection and bottlenecks:

For two-way, two-lane rural highways:

$$\text{Service Volume} = SV = 2,000 \frac{V}{c W_L T_L}$$

For Service Level E = capacity where $\frac{V}{c} = 1.0$

Therefore,

$$\text{Capacity} = C = 2,000 W_L T_L$$

where: W_L = adjustment factor for lane width and lateral clearance

T_L = truck factor

Queen Kaahumanu Highway:

Lane width = 12 feet

Shoulder = 6 feet

Trucks = 9% (State Highway-Kuakini Highway Realignment EIS)

$W_L = 1.0$, $T_L = 0.92$ for level terrain

$$\text{Highway Capacity (c)} = 2,000 \times 1.0 \times 0.92 = \underline{1,840 \text{ vph.}}$$

The total peak-hour traffic volume on Queen Kaahumanu Highway in 1995, including the traffic generated by the light industrial subdivision, is expected to be 1,690 two-way trips. The peak-hour volume is within the capacity of Queen Kaahumanu Highway at service level E, which is 1,840 vehicles per hour. Additional traffic volume generated after 1995, and exceeding the highway capacity, could warrant widening Queen Kaahumanu Highway. According to the "Report on a Preliminary Corridor Study for Kailua-Kawaihae Road," Department of Transportation, State of Hawaii, March 1968, the ultimate design of Queen Kaahumanu Highway is for 6 lanes.

The location of the access to the light industrial subdivision from Queen Kaahumanu Highway, has been coordinated with the State of Hawaii Department of Transportation. The planned

access has received approval from the State, with the condition that T.I.I. provide acceleration/deceleration lanes and a channelized left-turn lane from the highway into the subdivision.

The completion of the proposed connecting road (80 ft. ROW) between Queen Kaahumanu Highway and Mamalahoa Highway, should alleviate traffic along Palani Road. This proposed roadway will accomplish many of the objectives of the General planned County road which passes through Kealahou and Honokohau, at an estimated savings to the County of about 6 to 8 million dollars.

The establishment of the proposed industrial subdivision will remove some of the industrial related traffic from the congested urban center of Kailua. The increasing congestion in Kailua Village is detrimental to business, the resort industry and the overall character of the community. After the Queen Kaahumanu Highway and the Kuakini Highway are completed, much of the industrial related traffic will be able to completely by-pass Kailua Village.

L. Economic and Social

The recent history of Kailua-Kona has been characterized by the rapid growth of the tourism industry and related facilities. This rapid growth has resulted in a population increase over and above what would have otherwise been anticipated, along with a corresponding demand for various industries in the secondary economic sector. The growth of Kailua-Kona's tourism industry can be viewed as inducing or stimulating the opportunities for viable industrial and commercial developments, thereby providing additional employment opportunities. The increased employment opportunities, along with a broader spectrum of industrial uses, will strengthen the region's economic base. In addition, direct and indirect benefits will accrue to the State and County from increased real estate values and other taxable services. The fact that the County's policies, as defined in the General Plan, recognize the need for expanded industrial uses, indicates a determination by government that these uses are necessary for the orderly growth and expansion of the area.

1. Population

The proposed light industrial subdivision is viewed as meeting the light industrial needs of the growing tourism industry of Kailua-Kona. The project itself is not an inducement to population growth, since it is anticipated that most of the employees will be drawn from within the region. The proposed project represents a reaction to tourism-induced development. As such, need for industrial lands will follow, rather than generate significant population growth in the Kailua-Kona area.

2. Settlement Pattern

The proposed light industrial subdivision is contiguous to an existing urban district; constitutes part of a larger self-contained urban area; maximizes the use of existing public services and facilities; is strategically located along Queen Kaahumanu Highway midway between the two major areas of urban activities, Ke-Ahole Airport and Kailua-Kona; and therefore, would not constitute scattered urban development.

T.I.I.'s proposed light industrial subdivision will be adequately served by existing public service facilities, including fire fighting, police, electrical and telephone, water, solid waste disposal, roadways, and highways.

The site of the proposed light industrial subdivision is contiguous to an existing State land use urban district, the mauka (East) boundary of which is Queen Kaahumanu Highway.

Existing uses in the general vicinity of the Property include a quarry and concrete batching plant, a construction yard with office and storage building, the Kealakehe dump site, Kona Animal Pound, terminal freight site, and Honolulu Gas Company tank site.

The Property is situated proximally to the residential areas of North Kona, providing convenient access to the potential work force. The largest increase in single family homes is found North of Kailua Town, at Kealakehe and Kalaoa, mauka of Ke-Ahole Airport. Kalaoa has the largest number of subdivided lots in Kona and is just north of the Property. Over the past 2 years, a considerable number of houses have been built in the Kalaoa area.

The Kealakehe Regional Sports Complex Report, County of Hawaii, Department of Parks and Recreation, 1976, states that growth has been occurring north of Kailua Town, and will continue in this direction. The Kealakehe Sports Complex site is located approximately two miles north of Kailua Town, and 1.5 miles south of the Property. The following statement is taken from the section of the Kealakehe report entitled, Population: "The Kealakehe site is situated immediately north of Kailua Town, the urban center of north and south Kona, it is anticipated that the land development trends of this region will shift population growth in a northerly direction beyond Kealakehe. This will eventually result in Kealakehe being the centrally located major recreation facility in the Kona area."

The County General Plan describes an appropriate location for service oriented industrial development as follows:

"The location of industrial development is important for many reasons. In the case of service types of industrial development (non-basic), area designated for industrial uses must be close enough to population and/or commercial areas for efficiencies but still distant enough to avoid traffic and environmental problems."

The Property at Kaloko is clearly separated from the congested commercial and tourist activity centers and yet, it is still reasonably and conveniently close to the airport, harbor, and the major commercial and resort cores.

Current and future land use conflicts between the existing industrial activities and the tourism/commercial activities will be alleviated by relocating the light industrial expansion area from Kailua Village.

Although the Kona Community Development Plan, County of Hawaii (July 1975), has never been adopted by the County, one of its findings reads: "The industrial zoning abutting the King Kamehameha Hotel, and the old Airport Park is not in keeping with the general plan policies, this zoning should be altered." This finding further serves to reinforce the need to separate industrial activity from the Kailua urban core. The County of Hawaii, Draft General Plan Revision Program, April 1979, initially proposed that the general area between the old airport and the Hotel King Kamehameha be redesignated from Industrial to Medium Density Urban, since the area's proximity to the resort functions of Kailua Village may pose some land use conflicts.

3. Employment

The commencement of business in the light industrial subdivision will offer permanent employment opportunities to the people in the area. The exact number of jobs, types of jobs, salaries, etc., cannot be accurately computed, since the purchasers and tenants of the lots will pursue a variety of business endeavors. However, it can be concluded that a number of permanent jobs and short-term jobs for the construction of improvements will be created.

It is difficult to predict the sources of employees for the proposed light industrial subdivision. The potential labor force is predicated on the estimated population growth in the region; that in turn, is based largely on continued

growth in the primary industries--tourism, agriculture, and construction. The light industrial subdivision represents the secondary or service sectors of the economy, and would not be expected to induce as much growth as primary agricultural and visitor industries. Instead, the light industrial subdivision can be viewed as being responsive to the requirements of the primary employment sectors.

The majority of employees of the proposed light industrial subdivision will probably originate from any one of several residential concentrations in Kona. These areas include Kailua Village, residential areas mauka and north of Kailua, and areas south of Kailua along the Kuakini and Mamalahoa Highways.

Employees originating from the residential areas mauka of Kailua Village, like Holualoa, Kaloko and Kalaoa, could commute to the proposed light industrial subdivision by utilizing the proposed roadway between the Mamalahoa and Queen Kaahumanu Highways. This route would enable commuters to avoid congestion in Kailua and provide a more direct route to the proposed industrial subdivision.

Employees originating from south of Kailua could commute to the proposed industrial subdivision via the Kuakini Highway. They would travel north along Kuakini then east on Palani Drive, then north again on Queen Kaahumanu Highway to the industrial subdivision.

Employees living in Kailua Village could commute to the proposed project by travelling east on Palani Drive then north on Queen Kaahumanu Highway.

Overall traffic impact along the various routes of travel between the residential areas and the Kaloko Light Industrial Subdivision will be minimal. Traffic problems in the Kailua Village area should be alleviated, particularly with the implementation of the proposed new connector road (80-ft. ROW), between Mamalahoa Highway, and Queen Kaahumanu Highway.

4. Community Character

The proposed light industrial subdivision is appropriately located away from Kailua Village, the tourism/commercial center, which will greatly reduce the unnecessary land use conflicts and alleviate the serious environmental impacts presently existing in this area.

Reasonable separation of industrial activities from Kailua Village is consistent with the basic proposal of the Kailua Village Design Plan, Ordinance No. 217, to encourage a village-type atmosphere as a means of strengthening the resort/commercial functions of Kailua.

The Village Design Goals are as follows:

- o To maintain and improve the Kailua Village atmosphere as a "slow-moving, natural, casual, relaxed, low-rise" village.
- o To continue the traditional role of Kailua Village being the major tourist destination and retail shopping center of Kona.

The Property being situated outside and away from the Kailua Village urban area, is consistent with the goals of the design plan. Expansion of the existing industrial area in Kailua Village, near to the Hotel King Kamehameha, would not be appropriate. The Kailua Village Design Plan recommends that the limited industrial area behind the Hotel King Kamehameha be rezoned to Resort/Hotel at such time as the need is apparent.

M. Land Use

The proposed light industrial subdivision development generally conforms to the goals, policies, and standards of the County General Plan.

Following is an item by item discussion of the 2 GOALS, 4 POLICIES, and 9 STANDARDS of the County General Plan Land Use Element, Industrial sub-heading.

GOALS:

- o Designate and allocate industrial areas in appropriate proportions and in keeping with the social, cultural, and physical environments of the County.

Evidence of need, suitability of site, and compatibility with social, cultural, and physical environments of the region have been extensively discussed and supportive evidence provided.

- o Promote and encourage the rehabilitation of industrial areas which are serviced by basic community facilities and utilities.

By providing additional industrial lands to the North Kona District, a basic and urgent need of the community will be served. A healthy competitive atmosphere could serve to promote and encourage the rehabilitation of existing light industrial areas, in a manner that continues to be attractive to prospective tenants. The area is adequately serviced by basic community facilities and utilities.

POLICIES:

- o The County shall support the creation of industrial parks in appropriate locations as an alternative to strip development.

The proposed light industrial subdivision is appropriately located and does not constitute strip development, or "scatterization." The Property is located reasonably close to the airport, harbor and major commercial/resort areas, yet far enough removed from Kailua Village to avoid adverse land use conflicts and environmental impacts.

- o It shall be the policy of the County to achieve a broader diversification of local industries by providing opportunities for new industries and strengthening existing industries.

The tourism industry, which is the most important and fastest growing industry in west Hawaii, requires adequate support services to operate effectively. The availability of suitably located and fee simple light industrial lots will allow local businessmen an opportunity to establish viable, long-term operations, encouraging investment to construct quality improvements.

- o Through its zoning powers, the County shall locate industrial areas convenient to transportation facilities, and provide a variety of sizes of industrial sites, depending on the needs of the community.

The proposed light industrial subdivision is centrally located with respect to the airport, harbor, and major commercial and resort cores. Ke-Ahole Airport is approximately 4 miles to the North; Kawaihae Deep-draft Harbor is 25 miles to the north; and Kailua Village is roughly 3 miles to the South. The proposed subdivision abuts Queen Kaahumanu Highway, providing immediate access to the island-wide regional highway system.

Lots of 1-acre minimum size will be developed. Intended uses include warehousing, wholesale operations, construction yards, and other various similar uses permitted within the Limited Industrial (ML) districts.

- o The County shall attempt to improve the aesthetic quality of industrial sites and protect amenities of adjacent areas by requiring landscaping, open spaces, and buffer zones.

Landscaping and buffer zones will be provided along Queen Kaahumanu Highway, fronting the Property, and along all interior roads of the subdivision. Landscaping standards will be imposed upon individual lots by covenants in the deeds.

STANDARDS:

- o Industrial development shall be located in areas adequately served by transportation, utilities and other amenities.

The proposed light industrial subdivision is centrally located and abuts Queen Kaahumanu Highway, providing immediate access to the island-wide regional highway system.

Adequate water supply system, sewage disposal, drainage, electricity, and other utilities are available as previously discussed herein.

- o Off-Street parking and loading facilities shall be provided.

Deed restrictions and covenants will be developed to require lot owners to provide adequate off-street parking and loading facilities.

- o Performance Standards shall be used to determine qualification of industries in various industrial zones.

Only light industrial activities such as wholesale merchandising, warehousing, light manufacturing, and other similar compatible uses, will be allowed (as defined by the County of Hawaii Zoning Code, Article 14, Regulations for ML, Limited Industrial Districts).

- o Industrial development shall maintain or improve the quality of the present environment.

The Property is presently vacant and undeveloped. The land is gently sloping and covered with lava and scrub vegetation. The land is generally unsuited for most types of agricultural use due to low rainfall, and lack of soil material.

The proposed light industrial subdivision will not adversely affect the quality of the existing environment. Strict design and landscaping standards will assure that the visual intrusion of the light industrial subdivision on the environment is minimized, and that the appearance of the Property is in fact enhanced.

- o Industrial activities may be located close to raw materials.

The proposed light industrial subdivision will be service oriented, as opposed to basic industrial development, which is dependant on raw materials. Service types of industrial development must be close enough to population and/or commercial areas for efficiencies but still distant enough to avoid traffic and environmental problems.

- o Topography of industrial land shall be reasonably level.

The average slope of the Property varies between 5-10% and is well suited for the proposed light industrial subdivision.

- o Industrial development shall be conveniently located to its labor resource.

The Property is situated roughly 3 miles from the Kailua Village Urban Core where the highest population density in the region occurs. A large number of residential subdivisions are located to the north, east, and south of the Property. The trend for future residential development is north of Kailua Town, and more specifically, to the north and east of the Property.

- o Buffer zones shall be established between industrial and adjacent non-compatible uses of land.

Buffer zones consisting of open space, landscaping, and berms, or combinations of these, will be established as necessary. A buffer area between the light industrial subdivision and Queen Kaahumanu Highway is presently planned. A landscaped berm will be designed to minimize visual contact between motorists and the industrial subdivision improvements.

- o The direction of wind patterns and the absence of tradewinds shall be considered in locating industrial designations.

The separation of approximately 3 miles between the Property and the Kailua Urban Core Commercial/Resort Center, minimizes the adverse impacts of potential air quality and noise problems to neighboring land users. The nearest residential areas are also located over 3 miles mauka or east of the Property.

An analysis of the other elements of the General Plan, Economic, Environmental Quality, Flood Control and Drainage, Historic Sites, Housing, National Beauty, Public Facilities, Public Utilities, Recreation, Transportation, and Land Use; shows that the proposed light industrial subdivision is generally consistent with the County General Plan. This analysis has been submitted to the Hawaii County Planning Department, as part of the County General Plan Amendment Petition.

The recent General Plan Revision Program (1979) designated additional lands north of Kailua Village, and mauka of the project site for alternate urban expansion, while removing lands from the alternate urban expansion designation mauka of Kailua Village. The reasoning provided by the Planning Department, County of Hawaii, General Plan Revision Program, July 1978, was:

"In light of the aforementioned concern to gradually foster major focal points as well as to buttress the objective of protecting the better agricultural lands, we are suggesting that the Alternate Urban Expansion around the mauka Keahuolu/Keopu area (Item M) be deleted. As expressed in the initial revision (April 1978), we are suggesting that this alternate expansion area be directed to the mauka Kalaoa/Kaloko area (Item No. 27)."

These changes were adopted by Ordinance 456, in 1979.

The Kaloko-Honokohau lands makai of the Queen Kaahumanu Highway, extending down to the coastline, remain as alternate urban expansion. The growth trend for the North Kona area is clearly established by the County General Plan to be north of Kailua Village, extending up to the Ke-Ahole Airport.

The expansion of the existing industrial area near Kailua Village may pose environmental impacts and land use conflicts in addition to those already affecting the community character of Kailua. Increased industrial activity adjacent to a resort/commercial area is not in the best interest of the long term growth of the area.

The State owned Kealakehe lands has some land general planned for industrial uses, but only very limited area for future expansion exists since the site is bounded to the North by the future Kealakehe Sports Complex. The Kealakehe Sports Complex Master Plan Report states that anticipated development in the Kona area will be north of Kailua Village and beyond the sports complex area.

As the Kealakehe industrial area expands to the south, and the Liliuokalani industrial area expands to the north in the future, one large industrial area on both sides of the highway at the entrance to Kailua Village will ultimately result. Industrial areas may include activities which are not entirely compatible with, or appropriately situated adjacent to business, commercial or resort developments. Ideally, a light industrial area should be located close enough to the urban center for convenience and access but, far enough away to avoid adverse environmental impacts and land use conflicts.

The General Plan is a policy document which also contains a set of land use pattern guide maps (LUPAG). These maps are a graphic expression of the General Plan policies, particularly those relating to land uses, and they attempt to guide all land use decisions within the County.

According to the County of Hawaii Planning Department, "LUPAG maps indicate broad land use categories, utilizing the borad-brush approach, and periodic re-evaluation is healthy". (General Plan Revision Program, April, 1978)

N. Surrounding Land Uses

Any new development must take into consideration, impact on the surrounding land area. The lands surrounding the proposed project are generally undeveloped or have industrial type activities presently occurring, and therefore will not be significantly impacted by the project.

Adjacent to the mauka (east) boundary of the project site is land owned by T.I.I. that is vacant with no present plans for development.

The lands further east or mauka of the project are also owned by T.I.I., and are presently undeveloped and vacant.

There is an existing quarry and concrete batching plant south of the project site in the Honokohau area. These improvements are located within the State Conservation District and require a special permit to operate. The remaining portions of Honokohau are undeveloped.

Queen Kaahumanu Highway forms the western or makai boundary of the proposed industrial subdivision. The land on the makai side of the highway is within the State Urban Land Use District and has been designated, in the County General Plan, for alternate urban expansion. The area has been proposed as the Kaloko-Honokohau National Park, but its ultimate development is quite a number of years away. Negotiations are presently underway for acquisition of the land through purchase or land exchanges with the private landowners.

According to the proposed plans developed in 1974, the major park facilities development will occur in the coastal areas over a mile from the proposed industrial subdivision. An estimated 500,000 visitors annually were projected at the time the plan was developed. Physical facilities will include roadway systems to accommodate cars and buses, sewage treatment system, utility systems, and park buildings. The area is presently undeveloped and vacant.

The lands to the north of the proposed industrial subdivision are presently vacant and undeveloped. The lands that are directly adjacent on the north side of the project are owned by Takemasa International, Inc.

3

v

Alternatives

V. ALTERNATIVES

Various alternative land uses have been considered for the project site, including park development, agriculture, quarrying, residential development, and resort use. These alternatives were either not economically feasible, or were not conducive to good planning practices.

The "no-project" alternative, leaving the land in its present state, is not feasible to the landowners. Although this alternative would retain the land in its natural, open condition, the potential economic and social benefits to North Kona and Kailua Village would not be realized. These benefits include:

- o Needed fee simple light industrial lots appropriately located convenient to Kailua Village, yet far enough removed to eliminate land use conflicts and environmental impacts on a long-term basis.
- o Expanded business and employment opportunities for existing area residents.
- o Expanded industrial services supportive to the growing economic base industries, and the increasing permanent population.
- o Direct and indirect benefits of added income to the State and County derived from increased real estate and other taxation revenues.
- o Concurrence with the goals of the Kailua Village Design Plan, Ordinance No. 217, preserving and enhancing the "Kona Way of Life."

VI

Irreversible and Irretrievable Commitments of Resources

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed project will involve commitments of land, labor, materials, and capital. The land is expected to be under a long-term commitment to light industrial uses. Labor and materials involved in the project development and construction as well as the development of each lot will be virtually irretrievable. The Developers will commit their capital for the initial land development costs and the purchasers of the individual lots will expend their capital for improvements, equipment and supplies to further the commitment of this land for the purpose of light industrial activity.

VII

The Relationship Between Local
Short-term Uses of Man's Environment
and the Maintenance and Enhancement
of Long-term Productivity

VIII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The project site is presently vacant and non-productive. The soil consists of lava rock and the area has very limited agricultural value. Archaeological surveys have revealed no significant features and have assigned little historical value to the site. Value may be attributed to the aesthetic and scenic quality of open land, however, the property is surrounded by urban improvements. The State and County governments presently receive very little in tax revenues from the use of this land.

The proposed industrial subdivision, when fully implemented, will enhance the economic and cultural resources of the Kona area. A need exists for additional light industrial properties, to support the growth and expansion of the primary industries in Kona. Community needs and public desires for fee simple industrial land can be realized through this project. The proposed action will in the long-run, help to avoid adverse impacts of industrial activity in the business and resort community of Kailua. The additional industrial space will also provide employment and services needed by the residents.

The actions proposed by this development will benefit the State and County governments in several ways. The increased productivity and economic activity will add to the tax revenues. The proposed connecting roadway (80 ft. R.O.W.) through the project will eliminate the need for the County General Plan roadway through Kealahou and Honokohau, thus saving the County 6-8 million dollars. The development of the water and electrical systems will supplement the existing County systems with the development costs being borne by Takemasa International, Inc.

It is evident that the proposed action will take the land out of non-productively and develop it into a productive resource that will benefit the present and future economy of Kona.

VIII

Agencies Organizations and Individuals Consulted

VIII. AGENCIES, ORGANIZATIONS, AND INDIVIDUALS CONSULTED

Federal Agencies

Department of the Interior, National Parks
Department of the Interior, Fish and Wildlife Service
Department of Agriculture, Soil Conservation Service

State Agencies

Department of Planning & Economic Development
Department of Transportation
Department of Health
Department of Education
Department of Land and Natural Resources
Department of Agriculture

County Agencies

Planning Department
Department of Water Supply
Department of Public Works
Department of Research and Development
Department of Parks and Recreation

Private Organizations & Individuals

Hawaiian Standard Realty
Kona Realty
Gold Coast Realty
Hawaii Electric Light Company

IX

List of Necessary Approvals and Permits

IX. LIST OF NECESSARY APPROVALS AND PERMITS

<u>APPROVAL OR PERMIT</u>	<u>AGENCY</u>
Permit to Perform Work on State Highways	Department of Transportation, State of Hawaii
Approval for New Access Point for State Highway	Department of Transportation, State of Hawaii
County General Plan Amendment	Planning Commission, County of Hawaii
County Zoning Charge	Planning Commission, County of Hawaii
County Subdivision Approval	Planning Department, County of Hawaii
Grading, Grubbing, Excavation and Stockpiling Permit	Department of Public Works, County of Hawaii
Water Assessment	Department of Water Supply, County of Hawaii
Utilities Commitment Approval	HELCO
Construction Plans Approval	Department of Water Supply, County of Hawaii Department of Traffic, County of Hawaii Department of Public Works, County of Hawaii Division of Sewers, County of Hawaii Planning Department, County of Hawaii Department of Health, State of Hawaii Department of Transportation, Highways Division, State of Hawaii

X

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Appendixes

APPENDIX A

WATER COMMITMENT FROM
COUNTY DEPARTMENT OF
WATER SUPPLY AND
EXTENSION



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720

June 1, 1981

Mr. Henry Hoshide, Project Manager
Wilson Okamoto & Associates, Inc.
P. O. Box 3530
Honolulu, HI 96811

RECEIVED

JUN 04 1981

WILSON OKAMOTO & ASSOCIATES

STATE LAND USE BOUNDARY AMENDMENT
PETITIONER - T.S.K., ASSOCIATES
TAX MAP KEY 7-3-09:01 (PORTION)

An extension on the water commitment for the proposed 194-lot, light industrial subdivision is hereby granted until May 31, 1982 with the following conditions:

1. Water service will not be granted until the Pipeline Along Kuakini Highway, Phase II, is completed.
2. All applicable conditions of the approved boundary amendment petition shall be complied with.
3. All applicable requirements of the Department's policies and Rules and Regulations shall be complied with.
4. All necessary governmental approvals and permits shall be actively pursued and secured. Approvals and permits shall include, but not limited to, General Plan amendments and change of zone requests.
5. Further extensions for good cause may be considered if requests are submitted in writing one month prior to the expiration date.
6. Noncompliance with any of the above conditions will automatically void the commitment.

Should there be any questions, please do not hesitate to call Mr. Quirino Antonio of my staff at 935-1127.

H. William Sewake
H. William Sewake
Manager

QA

cc - Planning Department

... *Water brings progress...*



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

P. O. BOX 1820

HILO, HAWAII 96720

25 AUPUNI STREET

May 7, 1980

TO: Planning Department

FROM: Manager

SUBJECT: STATE LAND USE BOUNDARY AMENDMENT
CONSERVATION TO URBAN CLASSIFICATION
PETITIONER - T.S.K., ASSOCIATES
TAX MAP KEY 7-3-09:01 (PORTION)

Water availability to the subject request and subsequent 194-lot, light industrial subdivision is contingent on the completion of the Kuakini 20-inch pipeline project, Phases I and II. Further on- and off-site improvements, such as storage reservoirs, booster pumps and pipelines, will be required to service the subdivision.

Completion of the Kuakini, Phase I, project is scheduled for early 1981. No date is set for completion of Phase II; however, design is being finalized with bid advertisements expected within a month or so.

In fairness to other developers, this water availability response will expire on May 15, 1981 and is subject to the following conditions:

1. Should the subject request be withdrawn or denied, this response will be automatically voided.
2. Should the subject request be approved, this response will remain in effect subject to compliance with conditions of the Boundary Amendment; that is, noncompliance will automatically void this response.

The petitioner shall be informed of this response through a copy of this memorandum.

H. William Sewake
Manager

QA

cc - T.S.K., Associates
State Planning & Economic Development

... *Water brings progress...*

APPENDIX B

ARCHAEOLOGICAL SURVEY

RR 1, Box 581
Captain Cook, HI 96704
4 March, 1980

Mr. Kazuo Omiya, Vice-president
Kobayashi Development & Construction Inc.
1150 S. King Street, Suite 901
Honolulu, HI 96814

Dear Mr. Omiya:

In response to your request of 6 November, 1979, I have searched for archaeological and historical features on a portion of the parcel identified by Tax Map Key 7-3-09:1, situated at Kaloko, North Kona, Hawaii. The area examined consists of approximately 90 acres at the southwest corner of the parcel, adjoining the Kaahumanu Highway and the land of Honokōhau, as shown on the accompanying plan.

The terrain is rough lava throughout, predominantly a'a to the south and pahoehoe to the north, with no soil and sparse vegetation. It lies from about 4000 feet to 5700 feet from the shore and rises from approximately 80 feet to 160 feet in elevation. Average annual rainfall is probably less than twenty inches.

Such land was marginal to the aboriginal Hawaiian economy, which was based on horticulture and fishing. Permanent habitations were generally situated near the shore or at higher elevations where more abundant rainfall and soil permitted the cultivation of food crops. It was not until after the introduction of grazing animals, especially goats, that such land became economically productive; until then it served primarily as a source of wild plants having utilitarian value, to be gathered when needed.

The shore of Kaloko was of exceptional value, however, because of its large loko kuapā, walled fishpond. Kaloko pond and 'Ai-makapā in neighboring Honokōhau are the only such ponds on the west side of the island today. The pond with the distant uplands rich in forest resources and farm lands made Kaloko a valuable property in aboriginal as well as historic times; hence its award to Lot Kamehameha, grandson of Kamehemeha the Great, at the Mahele in 1848. More recently the parcel between the shore and the Kaahumanu Highway has been included in the proposed Kaloko-Honokōhau National Cultural Park in recognition of its major historic and cultural value.

In searching for archaeological features, I have traversed from south to north along the west and east sides of the parcel, and from west to east along the north and south sides. I have found no trails or other structures attributable to the aboriginal Hawaiian culture in the area examined. A single waterworn pebble, probably used as a slingstone, was found near the highway. In my opinion, there is little likelihood that any archaeological features will be found in the area with the possible exception of graves.

4 March, 1980

These may be concealed in the lava flows and can be exceedingly difficult to find. Some may be marked with stone cairns but none were seen. A more exhaustive search would, perhaps, best be done in conjunction with any future grubbing or grading in the area.

Because much of the area is on pahoehoe lava there is a possibility that lava tubes will be exposed by grading or construction. In that event an archaeologist should examine the tube for evidence of human occupation or the presence of graves. If graves are found which will be disturbed by construction, whether in a lava tube or elsewhere, provisions of section 338-25.5 Hawaii Revised Statutes and of Chapter 1 of Public Health Regulations, relating to disinterments, are applicable.

If I can be of further assistance, please call. My invoice is enclosed.

Very truly yours,

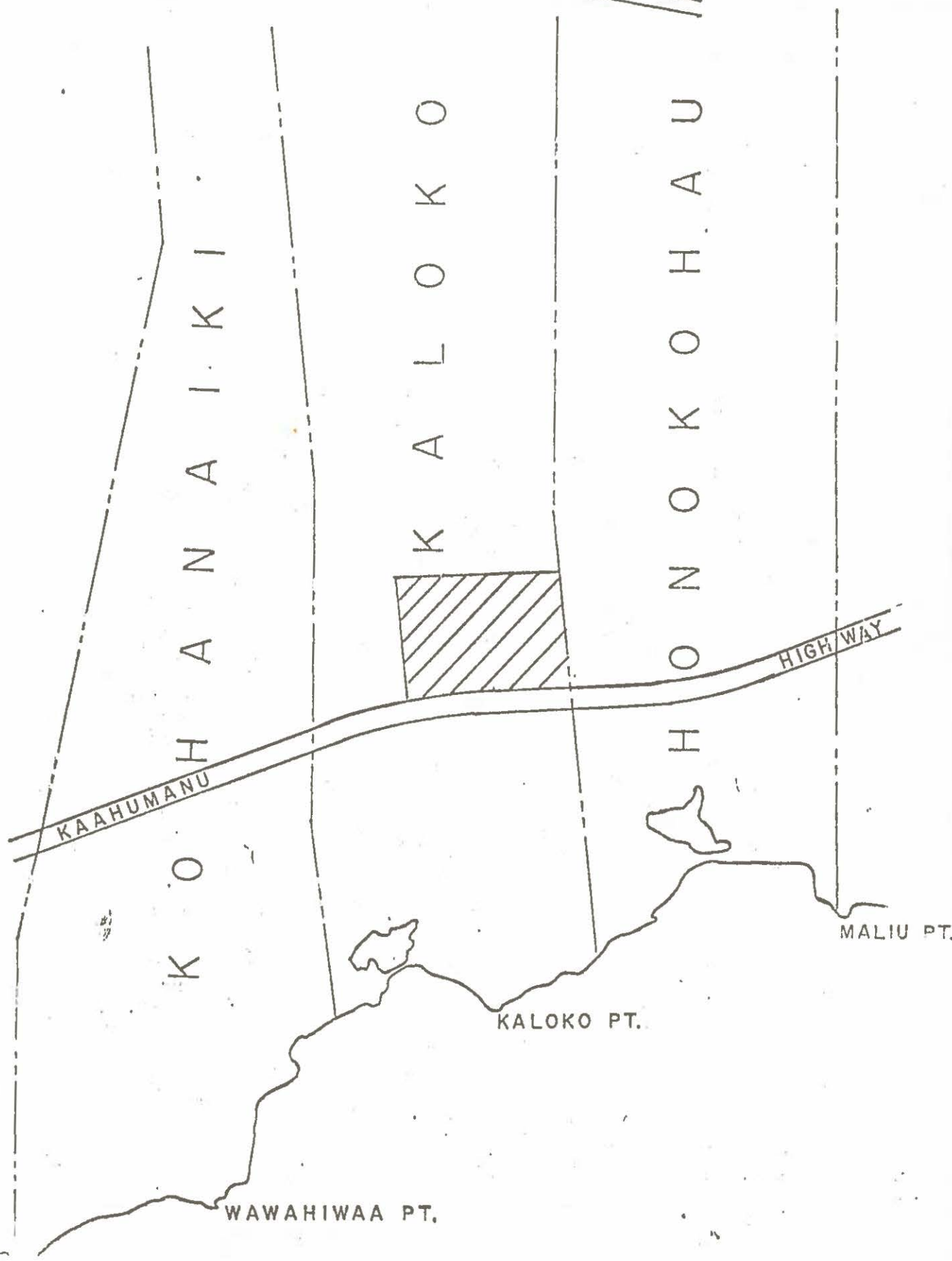
Lloyd J. Soehren

Lloyd J. Soehren
Consulting archaeologist

Encl.

cc: Historic Preservation Office
Bishop Museum

NORTH
1" = 2000'



RR 1, Box 581
Captain Cook, HI 96704
20 March, 1980

Mr. Kazuo Omiya
TSK Associates
1150 South King Street, #901
Honolulu, HI 96814

Dear Mr. Omiya:

In response to your letter of 6 March, 1980, I have searched for archaeological and historical features on a portion of the parcel identified by Tax Map Key 7-3-09:1, situated at Kaloko, North Kona, Hawaii, shown as Phase 2 on the accompanying plan.

The area surveyed is an extension of that examined and described in my report to Kobayashi Development & Construction Inc., dated 4 March, 1980, and shown as Phase 2 on the accompanying plan. The general and historical remarks in that report are thus equally applicable to this and therefore will not be repeated. In summary, the area examined lies between the upland agricultural zone and the littoral habitation zone, and was unsuited for either activity in aboriginal times. There is, consequently, little likelihood of archaeological features other than trails and possibly graves being present on the surface of the area.

In searching the area I have traversed from west to east along the north side of the proposed subdivision as far mauka as the hog wire fence. The fence appears to coincide with the eastern side of the project and probably marks the upper boundary of the conservation zone as well. This line was followed south to the a'a flow along the Honokohau boundary. Additional transects were walked from the southeast to the northwest corners and from the center of the east boundary toward the southwest corner of the subdivision.

A stepping stone trail crosses a narrow finger of a'a lava along the north side of the subdivision, about 1000 feet mauka of Kaahumanu Highway. The stepping stones are thin, flat slabs of pahoehoe. The trail leads northeasterly toward Hue and southwesterly toward Honokohau, but is not visible on the pahoehoe on either side of the a'a. A cairn (ahu) of small, flat slabs of lava was noted on the pahoehoe a few yards from the southwest end of the trail. It is about three feet indiameter and four feet high, and may have been a trail marker. A similar ahu was found some distance farther mauka.

Two similar trails, only about 50 feet apart, were found crossing a narrow patch of a'a only 100 feet wide, about 500 feet mauka of the first trail. Near the north end of the upper trail is a possible grave site in the a'a. No trails are discernible on the pahoehoe.

Midway along the mauka boundary, alongside the proposed mauka entrance to the subdivision, the fence crosses a major lava tube complex. About 100 feet makai of the fence, at the makai end of a collapsed portion of the tube the entrance to a large, deep tube should be explored evidence of occupation and graves before

20 March, 1980

construction closed it. A quantity of discarded corrugated roofing and other building materials has been dumped into the depression at the entrance to the tube.

The collapsed portion of the tube extends mauka from the fence for several hundred feet and will probably be in the path of future roads although outside the subdivision itself. Evidence of Hawaiian occupation was found under two natural arches and other overhangs, chiefly shellfish remains and areas cleared for sleeping. Such shelters were commonly used as temporary camp sites by travelers or perhaps as refuges during times of civil unrest or warfare. Some dripping water was noted in the lava tubes, which might have been collected for drinking. Such sources of water were important in this dry region.

About 400 feet south of the entrance to the deep tube is another, relatively near the surface and with a thin roof but quite roomy near the entrance. Shellfish remains and cleared areas were noted inside but there is no indication of extensive or intensive use of the cave. The entrance has been cleared and is readily accessible. The tube should be examined thoroughly before being destroyed.

The a'a lava flow covering the south boundary of Kaloko extends several hundred feet northward in places. Quarry operations on this flow in the adjoining land of Honokohau have intruded into Kaloko at the southeast corner of the proposed subdivision, reaching up to the old Huehue Ranch road in several places. Whether any archaeological features were present in the area cannot now be determined, of course, but it is unlikely that there were any. On this flow were noted several varieties of trees characteristic of the lowland botanical region, including ohe, halapepe and alah'e'e. Others would undoubtedly be recognized by a botanist.

Because the proposed subdivision is on predominantly pahoehoe lava, additional lava tubes which may have been utilized by the early Hawaiians will undoubtedly be found. Such uses in this region would include temporary habitation, the collection of water and interments. Any tubes found during the course of construction should be examined by an archaeologist. If graves are found which must be disturbed, whether in a lava tube or elsewhere, provisions of section 338-25.5 Hawaii Revised Statutes and Chapter 1 of Public Health Regulations, relating to disinterments, are applicable.

If I can be of further assistance, please call. My invoice is enclosed.

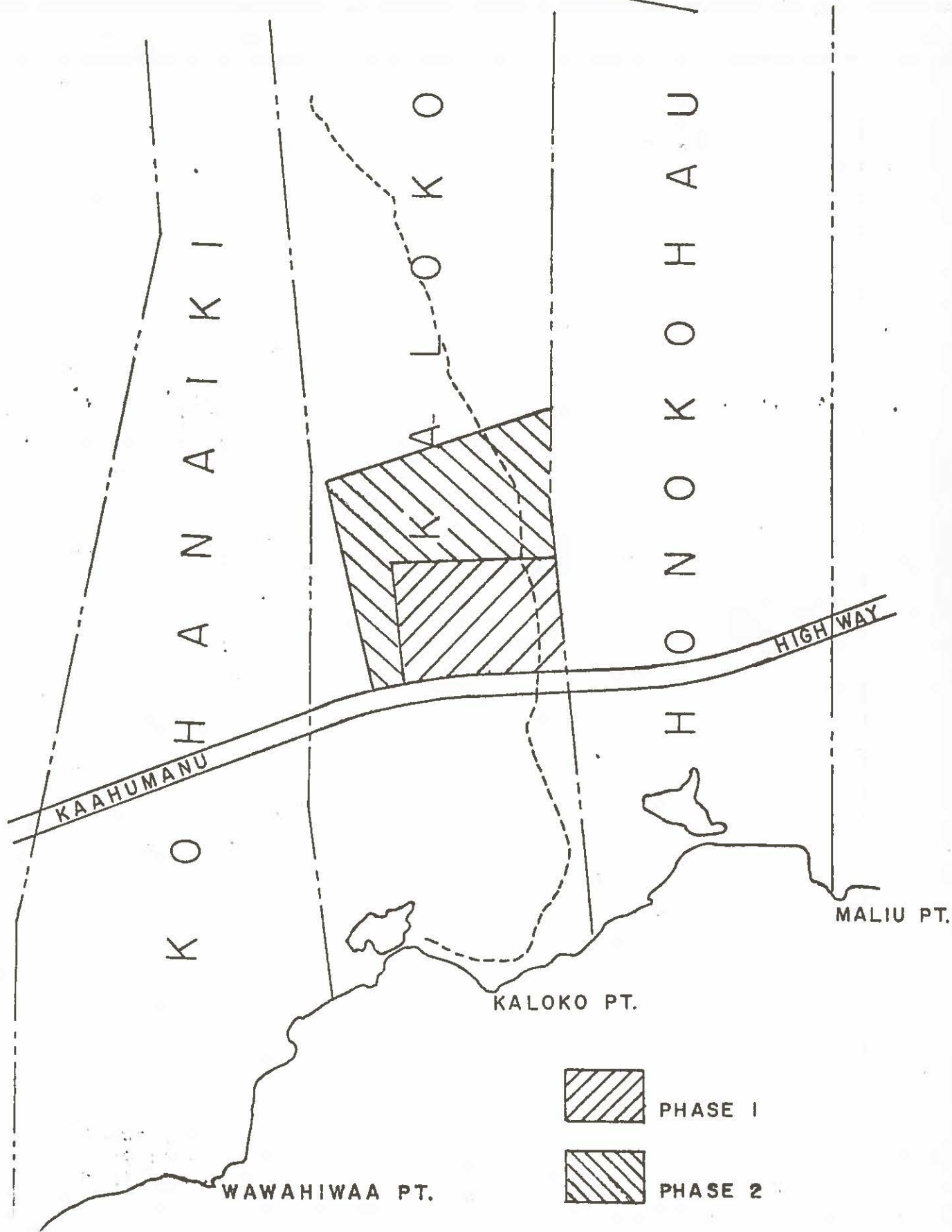
Very truly yours,

Lloyd J. Soehren
Lloyd J. Soehren
Consulting archaeologist

Encl.

cc: Historic Preservation Office
Bernice P. Bishop Museum

NORTH
1" = 2000'



APPENDIX C
TRAFFIC ANALYSIS

TRAFFIC ANALYSIS

A. Assumptions

1. Traffic growth in the area affected by the project is assumed to occur at an annual growth rate of 8% until 1995 when the project is anticipated to be fully developed. The eight percent rate is based on average growth of registered vehicles and population for Hawaii County and North Kona. (Ref. E.I.A. for Kona Industrial Subdivision Expansion and Commercial Development - by Belt Collins & Associates, page 85 and D-6)
2. Project will add to this projected increase in traffic.
3. Directional split of the estimated project generated traffic volume is as follows:
 - a. 20% will head mauka on the new Kaloko Roadway Extension to the Mamalahoa Road,
 - b. 80% will head makai to the Queen Kaahumanu Highway of which 60% will head south and 40% will head north.

B. Method of Analysis:

1. The traffic projections due to regional growth is estimated by increasing the 1978 traffic counts at an annual growth rate of 8% for the years 1985 and 1995. These years were selected to coincide with the expected completion of the proposed project's first and final increments.
2. The expanded traffic volume generated by the proposed project is then distributed to the various roadway locations and added to the estimated design year volume previously calculated.
3. The capacity of Queen Kaahumanu Hwy. and Palani Road were calculated based on data and tables obtained from the Highway Capacity Manual. The projected traffic volumes and computed capacities were then compared to determine the adequacy of the existing roadways to accommodate the proposed development.
4. Intersection capacity analyses, following procedures outlines in the Capacity Manual were made for QK-Palani and Kuakini-Palani intersections to determine the level of service along the different legs of the intersections.

C. Discussion:

The proposed project will increase the traffic volume on the Queen Kaahumanu Highway, Palani Road, Kuakini Hwy. and other roads in the area. However, such increases do not necessarily change the level of service or cause the traffic to exceed the capacity of the road.

Level of service is a qualitative measure representing the collective factors of speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs that are provided by a highway facility under a particular volume condition. The six levels of service, as described on the Highway Capacity Manual for application in identifying the conditions existing under various speeds and volume conditions on any highway, are as follows:

- Level A - free flow, with low volumes and high speed. Traffic density is low, with speed controlled by drivers' desires, speed limits and physical roadway conditions. There is little or no restrictions in maneuverability and drivers can maintain their desired speeds with little or no delay. (H-1 Freeway Sunday Morning)
- Level B - stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable with a low probability of traffic flow being restricted. The lower limit of this level of service has been associated with service volume used in the design of rural highways. (Moanalua Freeway during off-peak hour)
- Level C - is still in zone of stable flow but maneuverability and speed are more closely controlled by higher volume. Most drivers are restricted in their freedom to select their own speed, change lane and pass. A relatively satisfactory operating speed is still obtained with service volume perhaps suitable for urban design practice. (Vineyard Blvd. during off-peak hour)
- Level D - approaches unstable flow, with tolerable operating speeds being maintained. Fluctuation in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom and convenience are low, but conditions can be tolerated for short periods of time. (Kapiolani Blvd. after 8:00 a.m. off-peak hour)
- Level E - operations at even lower operating speeds than in level D, with volume at or near the capacity of the highway. At capacity, speeds are typically but not always, in the neighborhood of 30 mph. Flow is unstable, and there may be stoppages of momentary duration. (King St. Downtown Honolulu during peak hour)
- Level F - forced flow operation at low speeds, where volume are below capacity. These conditions usually result from queues of vehicles backing up from restrictions downstream. (Beretania St. between South St. & Punchbowl St. (Mauka of Municipal Building) during P.M. peak hour)

D. The Queen Kaahumanu - Palani Road - Kuakini Highway Intersections

Capacity analysis was made on the assumption that the Kuakini Hwy. Realignment would be implemented and the intersection would be signalized. The level of service of QK Hwy. and Palani Road legs are estimated to be at Levels "E" & "C" respectively. With intersection improvement, such as provision for turning lanes, the level of service will remain the same with the subdivision traffic superimposed upon the projected traffic volume.

All traffic movements at the Palani Road-Kuakini Highway Intersection are estimated to be at Level "F" (Forced Flow Operation) by 1985 except for the Palani mauka bound and Palani Makai-Thru movements, which would be at Level "E". All movements will be Level "F" by year 1995. The levels of service for this intersection remains unchanged with the added subdivision traffic superimposed upon the projected traffic volume.

The computed capacity of the QK Hwy. under prevailing conditions, not considering intersections and bottlenecks, is 1840 vehicles per hour (vph). Estimated 1985 traffic volume on the QK Hwy. based on projected growth, including the traffic generated by the proposed project is 1215 vph. The estimated 1985 traffic volume on QK based on Kuakini Hwy. Realignment E.I.S. prepared by the State Department of Transportation, including traffic generated by the proposed project is 1050 vph. None of the above projected volumes exceed the computed capacity signifying no significant impact on QK Hwy. to year 1985.

Traffic projection for 1995 on QK Hwy. as shown on the above referenced E.I.S. including those generated by the proposed project when full development will have occurred is 1690 vph. Again this volume is below the computed capacity.

Traffic projection for 1995 using the 8% growth rate will exceed computed capacity with or without the proposed project.

E. Significant Traffic Benefits Due to the Project

1. The Kaloko Light Industrial Subdivision will complete the Kaloko Roadway from the Mamalahoa Road to the Queen Kaahumanu Highway.
2. Completion of the Kaloko Roadway will reduce traffic along Palani Road from Mamalahoa Road to the Queen Kaahumanu Highway intersection.
3. Employment related traffic generated by the project from subdivisions mauka of the Queen Kaahumanu Highway and along the Mamalahoa Road will not contribute to congestion at the Palani-Queen Kaahumanu and Palani-Kuakini intersections.

APPENDIX D

E.I.S. COMMENTS AND
RESPONSES

RESPONSES AND COMMENTS TO THE E.I.S.

The following agencies and organizations have submitted their written responses and comments on the Environmental Impact Statement. The letters and their replies are included in this section.

Federal

Department of Agriculture	- Soil Conservation Service
Department of the Air Force	
Department of the Army	- Headquarters U.S. Army Support Command, Hawaii
Department of the Army	- U.S. Army Engineer District, Honolulu
Department of the Interior	- Fish and Wildlife Service
Department of the Interior	- Geological Survey, Water Resources Division
Department of the Interior	- National Park Service
Department of the Navy	- Headquarters, Naval Base Pearl Harbor

State

Department of Accounting and General Services - Division of Public Works
Department of Agriculture
Department of Defense
Department of Education
Department of Health
Department of Land and Natural Resources
Department of Planning and Economic Development
Department of Social Services and Housing
Department of Transportation
Office of Environmental Quality Control
University of Hawaii at Manoa - Environmental Center

County

Department of Parks and Recreation
Planning Department
Department of Water Supply

Other

American Lung Association of Hawaii
Hawaii Electric Light Company, Inc.



United States
Department of
Agriculture

Soil
Conservation
Service

cc: Takemasa International, Inc.

P. O. Box 636
Kealahou, HI 96750

June 1, 1981

County of Hawaii
Planning Department
25 Auahi Street
Hilo, Hawaii 96720

RECEIVED

JUN 08 1981

WILSON OKAMOTO & ASSOCIATES

Gentlemen:

Subject: Environmental Impact Statement for Kaloko Light
Industrial Subdivision, Kaloko, North Kona, Hawaii

I have reviewed the subject statement and have no comments to make.

Thank you for the opportunity to review this document.

Sincerely,

Gary K. H. Kam

GARY K. H. KAM
District Conservationist

cc:
Jack P. Kanals, State Conservationist
SCS, Hawaii

Takemasa International, Inc., Honolulu, HI

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1110 SOUTH KING STREET
HONOLULU, HAWAII 96814
PHONE (808) 521-1201

MAILING ADDRESS:
P. O. Box 9930
Honolulu, Hawaii 96809

C2361-01
July 15, 1981

Mr. Gary K.H. Kam
District Conservationist
Soil Conservation Service
U.S. Department of Agriculture
P. O. Box 636
Kealahou, Hawaii 96750

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Kam:

We greatly appreciate your response concerning the Kaloko Light
Industrial Subdivision Environmental Impact Statement. Your
response will be included in the final EIS document.

Sincerely,

Gary Okamoto

Gary Okamoto, Director
Planning Department



The Soil Conservation Service
is an agency of the
Department of Agriculture

SCS-48-1
10-78



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 15TH AIR BASE WING (PACAF)
HICKAM AIR FORCE BASE, HAWAII 96853

RECEIVED

MAY 26 1981

20 MAY 1981

REPLY TO
ATTN OF: DEEV (Mr Shiroma, 449-1831)

SUBJECT: EIS Kaloko Light Industrial Subdivision

WILSON OKAMOTO & ASSOCIATES

TO: County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

1. This office has reviewed the subject EIS and has no comment to render relative to the proposed project.
2. We greatly appreciate your cooperative efforts in keeping the Air Force apprised of your project and thank you for the opportunity to review the document.

Kenneth W. Cowan

KENNETH W. COWAN, Colonel, USAF
Director of Civil Engineering

Cy to: Takemasa International, Inc.
c/o Wilson Okamoto and
Associates, Inc.
P.O. Box 3530
Honolulu, Hawaii 96811

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1750 SOUTH KING STREET
HONOLULU HAWAII 96814
PHONE: (808) 531-5221
MAILING 440-0000
P.O. Box 3530
Honolulu, Hawaii 96811

C2361-01
July 15, 1981

Mr. Kenneth W. Cowan
Colonel, USAF
Director of Civil Engineering
Department of the Air Force
Headquarters 15th Air Base Wing (PACAF)
Hickam Air Force Base, Hawaii 96853

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Cowan:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto

Gary Okamoto, Director
Planning Department

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII
FORT SHAFTER, HAWAII 96858

APV-PHE-2

13 MAY 1981

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MAY 18 1981

WILSON OKAMOTO & ASSOCIATES

County of Hawaii
Planning Department
25 Aupuni Street
Honolulu, Hawaii 96720

Gentlemen:

The Environmental Impact Statement for the Kaloko Light Industrial Subdivision, Kaloko, North Kona, Hawaii has been reviewed and we have no comments to offer. There are no Army installations or activities in the vicinity of the proposed project.

Sincerely,

ADOLPH A. HIGHT
COL, EM
Director of Engineering and Housing

✓ Copy furnished:
Takemura International, Inc.
c/o Wilson Okamoto and Associates, Inc.
P.O. Box 3570
Honolulu, Hawaii 96811

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1133 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE: (808) 531-5251

MAILING ADDRESS:
P.O. Box 3570
Honolulu, Hawaii 96811

C2361-01
July 15, 1981

Mr. Adolph A. Hight
Colonel, EM
Director of Engineering and Housing
Department of the Army
Headquarters United States Army Support Command, Hawaii
Fort Shafter, Hawaii 96858

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Hight:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department

U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 120
77 SHAFTER, HAWAII 96811

FOUO-PV

1 June 1981

Mr. Sidney Fuks, Director
Planning Department
County of Hawaii
25 August Street
Hilo, Hawaii 96720

RECEIVED

JUN 03 1981

WILSON OKAMOTO & ASSOCIATES

Dear Mr. Fuks:

Thank you for the opportunity to review the Environmental Impact Statement for the Kaloko Light Industrial Subdivision. Based on this review, we provide the following comments:

- a. No Department of the Army (DA) Permit is required.
- b. The proposed subdivision site is not situated in any designated flood plain, but rather in an area of minimal flooding (Zone C designation). No floodproofing requirements are applicable to the proposed project under the requirements of the National Flood Insurance Program. This flood hazard evaluation is based on the preliminary Flood Insurance Study for the Island of Hawaii (28 April 1980) prepared by the Federal Insurance Administration.

Sincerely,


KISUK CHEUNG
Chief, Engineering Division

Copy To:
Takemasa International, Inc.
c/o Wilson Okamoto & Assoc., Inc.
P.O. Box 3530
Honolulu, HI 96811

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
THE BIRTH AND DEATH
RECONSTRUCTION OF
THE BIRTH AND DEATH
P.O. BOX 3530
Honolulu, Hawaii 96811

C2361-01
July 15, 1981


Mr. KISUK Cheung, Chief
Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Cheung:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,


Gary Okamoto, Director
Planning Department



United States Department of the Interior

FISH AND WILDLIFE SERVICE

300 ALA MOANA BOULEVARD
P. O. BOX 50167
HONOLULU, HAWAII 96850

ES
Room 6307

MAY 16 1981

County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

Re: EIS - Kaloko Light
Industrial Subdivision,
Kaloko, North Kona,
County of Hawaii, Hawaii

Gentlemen:

We have reviewed the subject Environmental Impact Statement (EIS) and offer the following comments.

The proposed activity should not have an adverse impact on significant fish and wildlife resources. Although the Hawaiian Owl (*Asio flammeus sandwichensis*) is known to frequent the property, it does not nest in the area and therefore will not be significantly affected.

We appreciate this opportunity to comment.

Sincerely yours,

Ernest Kosaka
Project Leader for
Environmental Services



Save Energy and You Serve America!

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1155 SOUTH KING STREET
HONOLULU, HAWAII 96814
PHONE: (808) 531-1781
MAILING ADDRESS:
P. O. BOX 50830
HONOLULU, HAWAII 96850

C2361-01
July 15, 1981

Mr. Ernest Kosaka
Project Leader
Division of Environmental Services
Fish and Wildlife Service
U.S. Department of the Interior
300 Ala Moana Blvd., Room 6307
P. O. Box 50167
Honolulu, Hawaii 96850

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Kosaka:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department



United States Department of the Interior

GEOLOGICAL SURVEY
Water Resources Division
P.O. Box 50166
Honolulu, Hawaii 96850

May 19, 1981

State of Hawaii
Environmental Quality Commission
550 Halekauwila Street
Suite 301
Honolulu, Hawaii 96813

Subject: Review Environmental Impact Statement for the Kaloko
Light Industrial Subdivision, North Kona, Hawaii

Gentlemen:

In response to your request for review of the subject document, we have no technical comments to offer at this time; however, the EIS would be enhanced by a statement of clearance from the Hawaii County, Department of Water, indicating that there are no future plans for use of the ground water body as a source of domestic supply.

We are returning the EIS for your use.


Benjamin L. Jones
District Chief

Enclosure

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1112 SOUTH KING STREET
HONOLULU, HAWAII 96814
PHONE: (813) 511-1781

MAILING ADDRESS:
P.O. Box 3830
Honolulu, Hawaii 96809

C2361-01
July 15, 1981

Mr. Benjamin L. Jones
District Chief
Water Resources Division
Geological Survey
U.S. Department of the Interior
P. O. Box 50166
Honolulu, Hawaii 96850

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Jones:


We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

It is unlikely that the ground water body in the vicinity of the project site will be used as a source of domestic supply. Therefore, obtaining a statement of clearance from the Hawaii County Department of Water Supply, as you suggested, is not necessary.

A review of available data has indicated that fresh basal water is probably not found less than four to five miles from the shore along most of the area between Kailua and Kawaihae. Recharge is low in this area and mixing with sea water occurs over long distances from the shore. The proposed project site is located only about one to two miles from the shore where the basal water is considered to be unsuitable for domestic use. (Reference: U.S. Geological Survey and State Department of Land and Natural Resources, Water Resources Summary: Island of Hawaii, April 1973).

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,


Gary Okamoto, Director
Planning Department



ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE



IN REPLY, REFER TO:

L7617

United States Department of the Interior

NATHANAI PARK SERVICE
PACIFIC AREA OFFICE
300 Ala Moana Blvd., Box 50165
Room 6305
Honolulu, Hawaii 96850

May 29, 1981

Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Gentlemen:

Thank you for the opportunity to comment on the proposed Kaloko Light Industrial Subdivision in North Kona, Hawaii dated April 30, 1981.

The makai boundary of the proposal in its entirety abuts the Kaloko Honokohau National Historical Park now established by the Congress.

The industrial park EIS does not address problems of water runoff makai onto the park proposal. Neither does it address the effect of cesspool disposal of wastes from an industrial area upon the ecology of adjacent Kaloko Pond. If these adverse effects have solution, they are not evident.

There seems no solution to the obvious aesthetic and visual impacts of an industrial area adjoining an historic park. The EIS authors, Wilson Okamoto and Associates, acknowledge this themselves on page 4 paragraph 2 wherein they state, regarding another site, that,

"...an industrial park may not be compatible with the County's proposed Kealahou Regional Sports Complex. . . ."

On page 5 paragraph 5 Wilson Okamoto themselves state,

"The activities and appearance of a light industrial subdivision are generally incompatible with tourist oriented centers. Industrial activities are generally more noxious, and are characterized by structures and activities which are not necessarily pleasing."

We believe the park and beach complex proposed at Kaloko will enhance both the economy and public welfare at Kailua, and that the park proposal should not be jeopardized by the suggested zoning change. We request you not rezone these lands to permit the proposed industrial use.

Sincerely,

Bryan Harry
Bryan Harry
Director, Pacific Area

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1111 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE: (808) 521-1221
MAILING ADDRESS:
P. O. Box 39999
Honolulu, Hawaii 96859

C2361-01
July 15, 1981

Mr. Bryan Harry, Director
Pacific Area Office
National Park Service
U.S. Department of the Interior
300 Ala Moana Blvd., Room 6305
P. O. Box 50165
Honolulu, Hawaii 96850

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Harry:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

In response to your comments and questions, we submit the following:

1. Comment:
The EIS does not address problems of water runoff onto the proposed historic park site.

Response:

Please refer to Section IV-E, relating to drainage impacts. In summary, runoff is not expected to have an adverse impact on the proposed park site due to regional topographic features, the low rainfall in the area and the rocky materials over and underlying the project site and environs.

Off-site runoff, routed around the proposed development to existing culverts under Queen Kaahumanu Highway, is not anticipated to be any greater than the existing runoff passing through the project site. On-site runoff will be conveyed either into the soil or to existing culverts crossing the highway. Drywells will contain most of the on-site runoff and effective filtration of contaminants can be expected from waters percolating vertically through the ground. However, lateral movement to the shoreline may occur should a void or tube be encountered. It is the intent of the developer to closely monitor all drywells during construction and seal any void or tube encountered. Flows that over-top the drywells are expected to be less contaminated and occur only during very large storms. Large storms occur infrequently and storm runoff is not expected to pose any serious problems. The average annual precipitation in the Kailua region is only 25 inches.

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Mr. Bryan Harry
Page 2
July 15, 1981

2. Comment:

The EIS does not address the effect of cesspool waste disposal upon the ecology of Kaloko Pond.

Response:

The impacts of liquid waste disposal on Kaloko Pond are discussed in Section IV-I-3. As previously stated, the proposed development will be located over a mile from the coast and should not adversely affect the water quality of Kaloko Pond. Effective filtration can be expected from vertical percolation of effluent. Individual lot owners will be required to seal voids or tubes found during cesspool construction, or utilize on-site treatment units.

3. Comment:

There seems no solution to the adverse aesthetic and visual impacts of an industrial area on the proposed historic park.

Response:

First of all, the quotes cited in your letter have been taken out of context and refer to industrial activities that are directly abutting recreational or resort complexes. The two uses are incompatible in such cases.

The proposed development, however, will be located over a mile from the coast where the proposed park activities will be focused and will be separated by the highway. This provides for a substantial buffer zone. Moreover, the proposed historic park, in itself, constitutes a significant impact on the aesthetic and visual quality of the area due to the support facilities that will be constructed and the large volume of people and vehicles projected for the park.

A complete discussion of visual impacts and mitigation measures is provided in Section IV-G. As stated, the existing impact of surrounding improvements and the implementation of mitigation measures by the developer must be considered in evaluating the significance of the proposed project's visual impact. The visual intrusion of urbanization and industrial-appearing improvements is already established along the mauka side of the highway. In an effort to minimize the visual impact of the proposed project, extensive landscaping, architectural, and other

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Mr. Bryan Harry
Page 3
July 15, 1981

mitigative measures will be implemented. These measures are expected to enhance the visual environment of the proposed development and effectively screen or soften unsightly views from the proposed historic park.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,


Gary Okamoto, Director
Planning Department

HEADQUARTERS
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860

IN REPLY REFER TO:

002A:am
Ser 900

19 MAY 1981

RECEIVED

MAY 21 1981

WILSON OKAMOTO & ASSOCIATES

County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

Gentlemen:

Environmental Impact Statement
Kaloko Light Industrial Subdivision
Kaloko, North Kona, Hawaii

The Environmental Impact Statement for the Kaloko Light Industrial Subdivision forwarded by the State Environmental Quality Commission has been reviewed and the Navy has no comments to offer.

At the request of the Commission and by copy of this letter, the subject EIS is returned to the Commission.

The opportunity to review the EIS is appreciated.

Sincerely,

R. D. EBER
CAPTAIN, CEC, U.S. NAVY
FACILITIES ENGINEER
OFFICE OF THE COMMANDER

Copy to:
State EQC (w/EIS)
Takemasa International, Inc.
c/o Wilson Okamoto and Associates, Inc.
P.O. Box 3530
Honolulu, HI 96811

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1155 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE: (808) 537-3551
FACSIMILE: (808) 537-3552
P.O. BOX 3530
HONOLULU, HAWAII 96811

C2361-01
July 15, 1981

Mr. R.D. Eber
Captain CEC, U.S. Navy
Facilities Engineer
Headquarters
Naval Base Pearl Harbor
Box 110
Pearl Harbor, Hawaii 96860

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Eber:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto
Gary Okamoto, Director
Planning Department

RECEIVED

MAY 16 1981

WILSON OKAMOTO & ASSOCIATES

(P)1423.1

MAY 14 1981

Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Gentlemen:

Subject: Environmental Impact Statement for
the Kaloko Light Industrial Subdivision

Thank you for this opportunity to review and comment on
the subject project.

The project will not have any adverse environmental
effect on any existing or planned facilities serviced by
our department.

Very truly yours,

RIKIO NISHIOKA
State Public Works Engineer

MI:jnt 3-2

cc: Takamasa International, Inc.
c/o Wilson Okamoto & Associates, Inc.

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1135 SOUTH KING STREET
HONOLULU, HAWAII 96810
PHONE: (808) 531-1251
MAILING ADDRESS:
P. O. Box 24530
Honolulu, Hawaii 96821

C2361-01
July 15, 1981

Mr. Rikio Nishioka
State Public Works Engineer
Division of Public Works
Department of Accounting & General Services
State of Hawaii
P. O. Box 119
Honolulu, Hawaii 96810

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Nishioka:

We greatly appreciate your response concerning the Kaloko Light
Industrial Subdivision Environmental Impact Statement. Your
response will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department

RECEIVED

MAY 27 1981

WILSON OKAMOTO & ASSOCIATES

May 22, 1981



STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
1428 SO. KING STREET
HONOLULU, HAWAII 96814

JOHN FARIAS, JR.
CHAIRMAN, BOARD OF AGRICULTURE

YVES STASAKIS
DEPUTY TO THE CHAIRMAN

MEMORANDUM

To: Mr. Sidney Fuke, Director
Planning Department
County of Hawaii

Subject: Environmental Impact Statement
Kaloko Light Industrial Subdivision
THK: 7-3-09:por. of 1 North Kona, Hawaii

The Department of Agriculture has reviewed the subject EIS and offers the following comments.

The EIS for the proposed light industrial subdivision states the daily maximum safe yield of the aquifer of the Kailua-Kona region and the estimated daily water usage of the proposed project. We believe further details are needed in regards to how much of the daily maximum safe yield is currently being utilized; what commitments to supply water have been made to other future projects in the area; and, assuming the eventual infilling of the area from Kailua-Kona to the airport, whether the daily yield of water will be sufficient to meet all of the needs of the region, including the Keahole Agricultural Park.

Thank you for the opportunity to comment.

JOHN FARIAS, JR.
Chairman, Board of Agriculture

cc: Takemasa International, Inc.
c/o Wilson Okamoto & Associates, Inc.
P.O. Box 2520
Honolulu, Hawaii 96811

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1133 SOUTH KING STREET
HONOLULU, HAWAII 96814
PHONE: (808) 531-5264
Telex: 980000
FAX: 980000

C2361-01
July 15, 1981

Mr. John Farias, Jr.
Chairman
Board of Agriculture
State of Hawaii
1428 So. King Street
Honolulu, HI 96814

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Farias:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

In response to your comments and questions, we submit the following:

- 1. Comment:**
How much of the daily maximum safe yield is currently being utilized?

Response:
Present demand is 5.8 MGD (maximum day) for the North and South Kona areas. Estimated safe yield of existing sources is in the order of 10.0 MGD with a current utilization of 58% of safe yield.
- 2. Comment:**
What commitments to supply water have been made to other future projects in the area?

Response:
Commitments have been made for an additional 8.29 MGD (maximum day), for a total present and committed demand of 14.09 MGD.
- 3. Comment:**
Assuming the eventual infilling of the area from Kailua-Kona to the airport, will the daily yield of water be sufficient to meet all of the needs of the region, including the Keahole Agricultural Park?

WILSON
OKAMOTO
& ASSOCIATES

C2361-01
Letter to Mr. John Farias, Jr.
Page 2
July 15, 1981

Response:

Any future infilling of the area requires adequate water supplies from the County or developer. This may require the County or developer to develop additional well(s) and/or transmission lines. The estimated sustainable yield of the Kona area is 100 MGD (Reference: State Department of Land and Natural Resources, State Water Resources Development Plan, September 1980, p. III-26, Table 7). This is more than 17 times the present consumption.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,



Gary Okamoto, Director
Planning Department

RECEIVED

MAY 15 1981

WILSON OKAMOTO & ASSOCIATES

State of Hawaii
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 Diamond Head Road
Honolulu, Hawaii 96816

MAY 14 1981

HIENG

County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

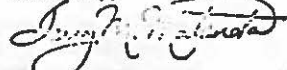
Gentlemen:

Kaloko Light Industrial Subdivision

Thank you for providing us the opportunity to review your proposed project,
Kaloko Light Industrial Subdivision Environmental Impact Statement.

We have completed our review and have no comments to offer at this time.

Yours truly,



JERRY H. MATSUDA
Captain, HANG
Contr & Engr Officer

cc:
Takemasa International, Inc.
Office of Env Quality Commission w/EIS

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
111 SOUTH KING STREET
HONOLULU HAWAII 96814
PHONE: (808) 527-1261
MAILING ADDRESS:
P.O. BOX 3530
HONOLULU, HAWAII 96811

C2361-01
July 15, 1981

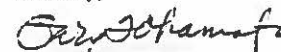
Mr. Jerry M. Matsuda
Captain, HANG
Contr and Engr. Officer
Office of the Adjutant General
Department of Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, Hawaii 96816

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Matsuda:

We greatly appreciate your response concerning the Kaloko Light
Industrial Subdivision Environmental Impact Statement. Your
response will be included in the final EIS document.

Sincerely,



Gary Okamoto, Director
Planning Department

GEORGE R. LAYTON
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2360
HONOLULU, HAWAII 96804

CHARLES S. CLARK
SUPERINTENDENT

RECEIVED
MAY 19 1981

WILSON OKAMOTO & ASSOCIATES

OFFICE OF BUSINESS SERVICES

May 15, 1981

Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Sir:

SUBJECT: Kaloko Light Industrial Subdivision
Kaloko, North Kona, Hawaii

We have no comments to offer on the Environmental Impact Statement for the subject project to develop the 194 light industrial subdivision lots.

Thank you for the opportunity to review the project.

Sincerely,

James E. Edington
JAMES E. EDINGTON
Assistant Superintendent

JEE:HL:j1

cc: Hawaii District
Takemasa International, Inc.

AN EQUAL OPPORTUNITY EMPLOYER

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
PLANNERS
112 SOUTH KANE STREET
HONOLULU, HAWAII 96814
PHONE (808) 521-1274
MAILING ADDRESS:
P. O. BOX 2820
HONOLULU, HAWAII 96804

C2361-01
July 15, 1981

Mr. James E. Edington
Assistant Superintendent
Office of Business Services
Department of Education
State of Hawaii
P. O. Box 2360
Honolulu, Hawaii 96804

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Edington:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto
Gary Okamoto, Director
Planning Department

GEORGE A. L. YUEN
DIRECTOR OF HEALTH

RECEIVED
JUN 12 1981

WILSON OKAMOTO & ASSOCIATES



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 5075
HONOLULU, HAWAII 96801
June 9, 1981

GEORGE A. L. YUEN
DIRECTOR OF HEALTH

JOHN A. CHALMERS, M.D.
DEPUTY DIRECTOR OF HEALTH

HENRY A. THOMPSON, M.D.
DEPUTY DIRECTOR OF HEALTH

MELVIN K. KOIZUMI
DEPUTY DIRECTOR OF HEALTH

ANGELA MAGDO SHOOT, M.A., A.D.
DEPUTY DIRECTOR OF HEALTH

In reply, please refer to
File: EPMS-65

MEMORANDUM

To: Mr. Sydney Fuks, Director
Department of Planning, County of Hawaii

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement (EIS) for Kaloko Light Industrial Subdivision, W. Kona, Hawaii

Thank you for allowing us to review and comment on the subject EIS. On the basis that the project will comply with all applicable Public Health Regulations, please be informed that we do not have any objections to this project.

We submit the following comments for your information and consideration:

1. Fugitive dust and solid waste disposal during grubbing and grading activities need to meet the requirements of Public Health Regulations, Chapter 43, Air Pollution Control, and Chapter 46, Solid Waste Management Control. The incorporation of a dust and erosion control plan in the construction plans is recommended.
2. The County Environmental Assessment and Policy Guideline Consistency Determination Form need to be completed for all proposed subdivisions, and land developments where sewage concerns are projected for the potable groundwater sources, unstable groundwater tables and surface receiving waters. These forms are available at the Hawaii District Health Office, Environmental Health Section.

We realize that the statements are general in nature due to preliminary plans being the sole source of discussion. We, therefore, reserve the right to impose future environmental restrictions on the project at the time final plans are submitted to this office for review.

For *Bruce M. Fong*
MELVIN K. KOIZUMI

cc: DEQC
Wilson Okamoto & Associates

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1115 SOUTH KING STREET
HONOLULU, HAWAII 96814
PHONE (808) 581-5361
MAILING ADDRESS:
P.O. BOX 3830
HONOLULU, HAWAII 96801

C2361-01
July 15, 1981

Mr. Melvin Koizumi
Deputy Director
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Koizumi:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

In response to your comments and questions, we submit the following:

1. Comment:
The incorporation of a dust and erosion control plan in the construction plans is recommended.

Response:

The construction plans for the proposed project will include a dust and erosion control plan as recommended.

The proposed project will comply with all applicable Public Health Regulations.

2. Comment:
Complete the County Environmental Assessment and Policy Guideline Consistency Determination Form.

Response:

This form will be filed with the Department of Health at the appropriate time.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,

Gary Okamoto

Gary Okamoto, Director
Planning Department

RECEIVED

JUN 02 1981

WILSON OKAMOTO & ASSOCIATES

May 28, 1981

County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

Gentlemen:

We have reviewed the draft Environmental Impact Statement (EIS) for the Kaloa Industrial Subdivision prepared by Wilson, Okamoto & Associates. We note that the developer does not intend to carry out an intensive archaeological survey of the site (pp. 37-38).

Please be advised that this area is archaeologically valuable. Please note, too, that by letter dated November 14, 1980 (copy enclosed), we recommended that an intensive archaeological survey be made. We continue to hold this view.

Sincerely,

Susumu Ono

SUSUMU ONO, Chairman
Board of Land and Natural Resources
State Historic Preservation Officer

enclosure

/cc: Takemasa International, Inc.

NOV 14 1980

REF. NO.: APO-2127

Mr. Gary Okamoto
Wilson Okamoto & Associates
P.O. Box 3530
Honolulu, HI 96811

Dear Mr. Okamoto:

We have reviewed the environmental assessment for industrial subdivision of 240 acres at Ka Loko by T.S.K., Associates.

A search of our records indicates that 2 archaeological reconnaissance surveys have been conducted within the proposed development area by Mr. Lloyd Soehren. During this research a number of archaeological features have been discovered which include grave sites, trails, ahū, lava tube habitation complexes, and habitation sites.

As noted in the environmental assessment, the proposed development area lies directly mauka of the Honokohau settlement, a site which is listed on the National Register of Historic Places and is also a National Landmark. "As such this area is archaeologically valuable as a potential place for studying the activities of pre- and early-contact Hawaiians... It is therefore invaluable in terms of our heritage."

We therefore recommend that an intensive archaeological survey be conducted by a qualified archaeologist. This survey should locate on a map all cultural resources in the area of proposed development. It is most helpful during the review process for this map to be designed at the same scale as those used for development purposes so that it is readily apparent if archaeological resources will be impacted by development plans. The survey report should also contain a record of the the configuration of the resources, evaluate the resources from a regional archaeological and anthropological significance standpoint, address whether it is the researchers' opinion that the proposed development would or would not adversely impact the significant resources and recommend possible mitigative measures where applicable. When the final report of this data is received by the Historic Sites Office, we will be able to review and evaluate the research and make further recommendations regarding the resources, where applicable.

Very truly yours,

/s/SUSUMU ONO

SUSUMU ONO, Chairman
Board of Land and Natural Resources
State Historic Preservation Officer

GS:eyo:ba

**WILSON
OKAMOTO
& ASSOCIATES**



**ENGINEERS
ARCHITECTS
PLANNERS**
1113 SOUTH KING STREET
HONOLULU, HAWAII 96814
PHONE (808) 521-1281
MAILING ADDRESS
P.O. BOX 5230
HONOLULU, HAWAII 96805

C2361-01
July 15, 1981

Mr. Susumo Ono, Chairman
Board of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street
Honolulu, HI 96813

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Ono:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

An intensive archaeological survey of the project site is not considered necessary at this time, based on the recommendation of our consulting archaeologist, Mr. Lloyd Soehren. Please refer to Appendix B for the findings of the archaeological reconnaissance survey. According to Mr. Soehren, the archaeological features identified during the reconnaissance survey are not unique and require only proper documentation before the proposed project can proceed. In the event that any possible archaeological features are located during construction, the State Historic Preservation Office will be notified and an examination of these features will be made by an archaeologist.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department



DEPARTMENT OF PLANNING
AND ECONOMIC DEVELOPMENT

Kamapala Building 750 South King St. Honolulu, Hawaii • Mailing Address: P.O. Box 2799 Honolulu, Hawaii 96804

June 4, 1981

Ref. No. 3207

Mr. Sidney Puke
Director
Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Puke:

SUBJECT: Kaloko Light Industrial Subdivision, Kaloko,
North Kona, Hawaii

Our staff has reviewed the Environmental Impact Statement (EIS)
for the Kaloko Light Industrial Subdivision and found it adequately
describes identifiable environmental impacts of the project.

Thank you for the opportunity to review and comment on this EIS.

Sincerely,



Hideto Kono

GEORGE R. ARYOSH

HIDETO KONO

FRANK SKRIVANER

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1111 SOUTH KING STREET
HONOLULU, HAWAII 96804
PHONE: (813) 331-3331
MAILING ADDRESS:
P.O. Box 2880
Honolulu, Hawaii 96804

C2361-01
July 15, 1981

Mr. Hideto Kono, Director
Department of Planning and Economic Development
State of Hawaii
P. O. Box 2359
Honolulu, Hawaii 96804

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Kono:

We greatly appreciate your response concerning the Kaloko Light
Industrial Subdivision Environmental Impact Statement. Your
response will be included in the final EIS document.

Sincerely,



Gary Okamoto, Director
Planning Department

GEORGE R. ARYOSH
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF SOCIAL SERVICES AND HOUSING

May 29, 1981

Franklin Y. K. Sunn
DIRECTOR
Alfred R. Suga
DEPUTY DIRECTOR
RICHARD PAGLEMAN
DEPUTY DIRECTOR

RECEIVED
JUN 10 1981

WILSON OKAMOTO & ASSOCIATES

Director, Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Sir:

SUBJECT: Environmental Impact Statement Review
Title: Kaloko Light Industrial Subdivision
Location: Kaloko, North Kona, Hawaii
Classification: Applicant Action

The Department of Social Services and Housing has reviewed the subject E.I.S. and can offer no comments relative to the proposed action.

Thank you for allowing us to comment on this matter.

Sincerely,

FRANKLIN Y. K. SUNN
Director

cc: Takemasa International, Inc. ✓
Environmental Quality Commission

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
1150 SOUTH KANE STREET
HONOLULU, HAWAII 96814
PHONE (808) 581-5401
FAXING (808) 581-5401
P. O. BOX 5530
HONOLULU, HAWAII 96809

C2361-01
July 15, 1981

Mr. Franklin Y.K. Sunn, Director
Department of Social Services and Housing
State of Hawaii
P. O. Box 339
Honolulu, Hawaii 96809

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Sunn:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department

RECEIVED

JUN 17 1981

WILSON OKAMOTO & ASSOCIATES

STP 8.7338

June 10, 1981

Mr. Sidney Fuke, Director
Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Fuke:

Environmental Impact Statement
Kaloko Light Industrial Subdivision

Thank you for giving us the opportunity to comment on
the subject Environmental Impact Statement.

We have no substantive comments to offer which could
improve the document.

Very truly yours,

Ryokichi Higashionna
Ryokichi Higashionna
Director of Transportation

cc: Takemasa International, Inc.
OEQC

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
ARCHITECTS
PLANNERS
111 SOUTH KALANANUO STREET
HONOLULU, HAWAII 96813
PHONE: (808) 521-1111
FAXING: (808) 521-1111
P.O. Box 3830
Honolulu, Hawaii 96811

C2361-01
July 15, 1981

Mr. Ryokichi Higashionna, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Higashionna:

We greatly appreciate your response concerning the Kaloko Light
Industrial Subdivision Environmental Impact Statement. Your
response will be included in the final EIS document.

Sincerely,

Gary Okamoto
Gary Okamoto, Director
Planning Department

GEORGE B. ARYODEN
CHIEF



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
100 HALEKUANUA ST.
ROOM 301
HONOLULU, HAWAII 96813

June 3, 1981

RECEIVED

JUN 04 1981

WILSON OKAMOTO & ASSOCIATES

Sidney Fuke, Director
Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

SUBJECT: Environmental Impact Statement for Kaloko Light
Industrial Subdivision, Kaloko, North Kona, Hawaii

Dear Mr. Fuke:

We have reviewed the subject statement and offer the following
comments for your consideration:

MARKET ANALYSIS (p. 7)

The T.I.I. market analysis indicated that 200 industrial lots
will be needed. It is not clear whether the total need for indus-
trial lots is 200 one-acre lots or 200 ten-acre lots. Are the
200 lots needed, one-acre parcels? Clarification is warranted.

SOLID WASTE (p. 22)

It should be noted in the EIS that there is presently a
problem with smoke and burning at the Kealahou landfill.

AIR QUALITY (p. 32)

The statement, "Light industrial activities occurring within
T.I.I.'s proposed light industrial subdivision, will not have
a significant impact on air quality," needs qualification.
Since industrial activities range from auto body repair to
warehousing, it is important to consider the range of pollutants
that may be generated from the proposed activities. An expanded
discussion covering the types of polluting activities within the
subdivision should be included.

CATCH BASINS (p. 33)

Because many of the activities within the industrial subdivision
contain organic surface contaminants such as chemicals and oils
that combine with inorganic materials during surface runoff, they

HARRY T. AKAGI
ACTING DIRECTOR
TELEPHONE NO.
548-0916

Sidney Fuke
June 3, 1981
Page Two

can lead to odors in the catch basins and poor water quality.
Some of these problems can be alleviated through regular sweep-
ing and cleaning. Consequently, a discussion on this matter
should be given.

In addition, the EIS should recognize that certain hazardous
materials may be stored or used in the subdivision. Thus, the
discussion should include mitigating measures which would reduce
harmful effects on the hazardous wastes including disposal and
handling.

DOCUMENTATION (p. 54)

The statement, "No rare or endangered wildlife species are
known to inhabit the property," should be documented. What is
the basis for this conclusion? Who conducted the survey?

ALTERNATIVES (p. 54)

According to the EIS Regulation 1:42 g., "Any known alternatives
for the action which could feasibly attain the objectives of
the action - even though more costly - shall be described and
explained as to why they were rejected," the section warrants
expansion. Moreover, the EIS regulation further indicates that,

A rigorous exploration and objective evaluation of
the environmental impacts of all reasonable alter-
native actions, particularly those that might enhance
environmental quality or avoid or reduce some or all
of the adverse environmental benefits costs, and risks
shall be included in the agency review process in order
not to prematurely foreclose options which might enhance
environmental quality or have less detrimental effects.

We thank you for the opportunity to review this document.

Sincerely,

Harry T. Akagi
Acting Director

Attachments
cc: Wilson Okamoto & Associates (with attachments)

**WILSON
OKAMOTO
& ASSOCIATES**



**ENGINEERS
ARCHITECTS
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1155 SOUTH KING STREET
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PHONE (808) 521-5287
FAXING ADDRESS:
P.O. BOX 2880
HONOLULU, HAWAII 96811

C2361-01
July 15, 1981

Mr. Harry Akagi
Acting Director
Office of Environmental Quality Control
State of Hawaii
550 Halekiauila St., Room 301
Honolulu, Hawaii 96813

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Akagi:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

In response to your comments and questions, we submit the following:

1. Comment:
Clarify the lot size of the 200 industrial lots indicated in the market analysis.

Response:
The lot size is minimum one acre.

2. Comment:
Note that there is presently a problem with smoke and burning at the Kealahou landfill.

Response:
As stated in Section IV-I-4, solid waste from the proposed development will be initially disposed of at the County disposal area in Kealahou. This facility is scheduled to be closed in the near future and a new facility is planned north of Ke-Ahole Airport. The new facility should have sufficient capacity to accommodate the needs of the proposed development.

3. Comment:
Discuss the types of air polluting activities that will occur within the proposed light industrial subdivision.

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Mr. Harry Akagi
Page 2
July 15, 1981

Response:

The types of uses that will be permitted within the proposed light industrial subdivision are governed by the County Zoning Code. Rezoning to a Limited Industrial district (ML) is required for the proposed project. Generally, this zoning allows 1) any manufacturing, processing, assembling, research, laboratory, bottling or packaging uses which are conducted in a building and from which there is no odor, dust, smoke, gas, noise, vibration, radiation or other effect which has measurable nuisance qualities beyond the property line" (emphasis added). Thus, there will be no major stationary emission sources permitted within the proposed subdivision.

4. Comment:
Discuss mitigation measures to minimize problems resulting from contaminants and hazardous materials entering the catch basins.

Response:

The drainage facilities for the proposed development will be designed to comply with the County of Hawaii drainage standards. The developer intends to dedicate these facilities to the County who will then be responsible for maintenance of the catch basins. Individual landowners/tenants also will be required to comply with State and County regulations governing the runoff that enters the drainage system.

Under the County Zoning Code, uses that store or handle hazardous materials are not allowed within the Limited Industrial (ML) district intended for the proposed subdivision. These types of uses are only permitted within the General Industrial (GI) district which applies to "areas for uses that are generally considered to be offensive or have some element of danger."

5. Comment:
Document the statement, "no rare or endangered wildlife species are known to inhabit the property".

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Mr. Harry Akagi
Page 3
July 15, 1981

Response:

As stated in Section III-B-3, the discussion on fauna is based on a review of available data regarding surrounding lands. For the purposes of this report, the inland area described by the Ke-Ahole EIS for the National Energy Laboratory of Hawaii (December, 1976) was assumed to be similar to the project site because of its general proximity, and similarity of elevation, topography, and climate. The wildlife survey conducted for the Ke-Ahole EIS was used to determine that there are no rare or endangered wildlife species within the project site. This has been substantiated by the U.S. Department of the Interior, Fish and Wildlife Service in their response to the Kaloko EIS, dated May 26, 1981.

6. Comment:

Expand the discussion of alternatives.

Response:

Alternatives to the proposed light industrial subdivision are discussed in Section V. As stated, various activities, including "no project", were considered by the developer and determined to be economically infeasible or not conducive to good planning practices. Further elaboration of this section is not warranted.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,



Gary Okamoto, Director
Planning Department



University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

Office of the Director

RECEIVED
JUN 15 1981

June 8, 1981

RE:0331

County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

WILSON OKAMOTO & ASSOCIATES

Dear Sir:

Draft Environmental Impact Statement
Kaloko Light Industrial Subdivision
Kaloko, North Kona, Hawaii

The Environmental Center has reviewed the above Draft EIS with the assistance of Joseph Halbig, Hilo College; Jacquelin Miller, Garret Kawamura, and Alexis Cheong Linder, Environmental Center.

Flora and Fauna (p. 26)

The initial paragraph is misleading the endemic caper (*Capparis sanwichiensis* var. *zoharyi*) is currently being reviewed by the Department of the Interior, Fish and Wildlife Service.

While it is not listed as a proposed endangered or threatened species it has been given Category I determination, those "taxa for which the service presently has sufficient information on hand to support the biological appropriateness of their being listed as endangered or threatened species."

Air Quality (p. 32)

What are the allowable uses (i.e. businesses) that could be permitted by the existing county zoning? It is premature to state that light industrial activities occurring within the proposed subdivision will not have a significant impact on air quality particularly since not all of the subdivision has been leased.

Plant and Animal Life (p. 34)

What is the basis for the statement "no rare or endangered plants are known to exist on the property." Has a botanical survey been conducted for the area? If so, who conducted the study and what was the extent of the study?

AN EQUAL OPPORTUNITY EMPLOYER

County of Hawaii
Planning Department

-2-

June 8, 1981

Archaeological/Historical (p. 38)

This proposal, the Kaloko-Honokohau National Cultural Park and the sports complex in Kealahou, are all within close proximity of one another. These proposals will have direct cumulative impacts on the environment, traffic, public facilities, etc. While we do not wish to place an unreasonable burden on the developer, we wish to emphasize that the impacts of incremental development need to be considered and subsequent mitigative measures should become the responsibility of no 'one' agency or developing party.

We were pleased to note that drainage and cesspool disposal for individual lot owners were to be governed by deed restrictions which require that lava tubes or voids be sealed off prior to construction and implementation of these facilities (p. 40).

We look forward to receiving your reply.

Sincerely,

Diane C. Drigot
Diane C. Drigot, Ph.D.
Acting Director

LK

cc: Takemasa International, Inc. ✓
OEQC
Joseph Halbig
Jacquelin Miller
Alexis Cheong Linder

C2361-01
July 15, 1981

**WILSON
OKAMOTO
& ASSOCIATES**



**ENGINEERS
ARCHITECTS
PLANNERS**
115 SOUTH KING STREET
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P.O. Box 3890
Honolulu, Hawaii 96807

Ms. Diane Drigot, Ph.D.
Acting Director
Environmental Center
University of Hawaii at Manoa
Crawford 317, 2550 Campus Road
Honolulu, HI 96822

Subject: EIA for Kaloko Light Industrial Subdivision

Dear Dr. Drigot:

In response to your comments and questions, we submit the following:

1. **Comment:**
The endemic caper (*capparis sandwichiana* var. *zoharyi*) is currently being reviewed as a possible endangered or threatened species.

Response:

Thank you for informing us that the endemic caper has been given Category 1 determination by the U.S. Department of the Interior, Fish and Wildlife Service.

2. **Comment:**
What are the allowable uses that could be permitted by the existing county zoning? It is premature to state that these uses will not have a significant impact on air quality.

Response:

Rezoning to a Limited Industrial district (NL) is required for the proposed project. Generally, this zoning allows any manufacturing, processing, assembling, research, laboratory, bottling, or packaging uses which are conducted in a building and from which there is no odor, dust, smoke, gas, noise, vibration, radiation or other effect which has measurable nuisance qualities beyond the property line, (emphasis added). Given this stipulation, no major stationary emission sources will be permitted within the proposed subdivision. A complete listing of the permitted uses in the Limited Industrial district can be found in the Hawaii County Zoning Code, Article 14.

3. **Comment:**
What is the basis for the statement "no rare or endangered plants are known to exist on the property"?

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Dr. Diane Drigot
Page 2
July 15, 1981

Response:

The statement was based on a review of environmental impact statements prepared for surrounding lands. However, due to the comments that have been received concerning existing plant life within the project site, the developer has contracted a professional botanical consultant, Mr. Ken Nagata, to conduct a reconnaissance survey of the site. The survey will identify all plants found within the site and will be conducted during July, 1981. Upon completion of the study at the end of July, a copy will be forwarded to the Environmental Center for your use.

4. **Comment:**
Consider the cumulative impacts of the subject proposal, the Kaloko-Honokohau National Cultural Park, and the sports complex in Keaiakehe on the environment, traffic public facilities, etc.

Response:

This project has been designed in coordination with County, State, and Federal agencies in an effort to identify specific concerns and measures to minimize any adverse impacts of the proposed project. Current project plans have incorporated the comments of these agencies. Please refer to Section VIII for the list of parties that have been consulted throughout the planning stage. It is the responsibility of these agencies to determine the cumulative impacts of the various proposals and adequately provide for the needed public services and facilities. As indicated in Section IV, relating to potential impacts, existing public services and facilities such as roadways, water, police and fire protection, and utilities can adequately serve the proposed industrial subdivision. Any required improvements to existing services and facilities will be provided by the developer.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department

COPY

DEPARTMENT OF PARKS & RECREATION
COUNTY OF HAWAII
HILO, HAWAII 96720

RECEIVED

MAY 14 1981

WILSON OKAMOTO & ASSOCIATES

May 13, 1981

Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Subject: Kaloko Light Industrial Subdivision - EIS
Kaloko, North Kona, Hawaii

We have no comments or objections to offer on the subject EIS.

Thank you for the opportunity to review the document.

Milton T. Hakoda

Milton T. Hakoda
Director

cc: Takemasa International Inc.

WILSON
OKAMOTO
& ASSOCIATES



ENGINEERS
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111 SOUTH KING STREET
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P. O. BOX 30000
HONOLULU, HAWAII 96801

C2361-01
July 15, 1981

Mr. Milton T. Hakoda, Director
Department of Parks and Recreation
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Hakoda:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto

Gary Okamoto, Director
Planning Department



PLANNING DEPARTMENT

26 AUPUNI STREET • HILO, HAWAII 96720

COUNTY OF
HAWAII

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JUN 25 1981

WILSON OKAMOTO & ASSOCIATES

HERBERT T. MATAYOSHI

Mayor

SIDNEY M. FUKU

Deputy

DUANE KANUHA

Deputy Director

June 23, 1981

Mr. Gary Okamoto
Wilson, Okamoto & Associates
P. O. Box 3530
Honolulu, Hawaii 96811

Dear Mr. Okamoto:

Draft EIS/Kaloko Light Industrial Subdivision General Plan Amendment-Conservation to Urban

We have reviewed the subject draft EIS submitted in conjunction with a General Plan Amendment petition. While our comments are being submitted after the deadline June 7, 1981 and therefore responses for the comments do not necessarily need to be incorporated within the revisions, we nevertheless submit them for your information. We note that some of our comments are similar to others submitted by other agencies.

- 1) The assumption that vegetation is similar to that described by the Ka-ahole Environmental Impact Statement for the Natural Energy Laboratory or the Kona Airport Industrial Park Subdivision may be generally reasonable. It is however not specifically valid. If the discussion of vegetation is left to the general level, then the range of vegetative species ought to be listed as possibly occurring on the subject property. Thus, in addition to those plants listed; others such as noni (*Morinda citrifolia*), ilima (*Sida* sp.), lantana (*Lantana camara*), a'ali'i (*Dodonaea* sp.), wiliwili (*Erythrina sandwicensis*), etc. should be likewise listed. The alternative as was suggested in the environmental assessment/preparation notice was that a botanical survey be conducted and the plants found so listed. In particular since the ohe and halapepe was noted in the area the survey should have been conducted. If the "normal" range of those species is at higher elevations, the occurrence at the subject property is then relatively "unique".

Mr. Gary Okamoto

Page 2

June 23, 1981

- 2) An intensive archaeological survey of the subject property was called for through the environmental assessment/preparation notice. We note that none was conducted.
- 3) The EIS note that drainage will be channeled to culverts crossing Queen Ka'ahumanu Highway. What is the potential impact to lands makai of the Highway? Are drywells or sumps located on the makai side of the highway or is the drainage waters expected to sheet flow over the lava?
- 4) In terms of the land use discussion, what are the potential impacts of the proposed industrial designation on Resort designations at Honokohau and Kaioko should for some reason the Kaloko-Honokohau Settlement area not be acquired for a National Historic Park.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Sidney M. Fuku

Sidney M. Fuku
Planning Director

VKG:lgv

**WILSON
OKAMOTO
& ASSOCIATES**



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HONOLULU, HAWAII 96809

C2361-01
July 15, 1981

Mr. Sidney Fuke, Director
Planning Department
County of Hawaii
25 Aupuni Street
Hilo, HI 96720

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Fuke:

In response to your comments and questions, we submit the following:

1. Comment:

The assumption that vegetation is similar to that described by the Ke-Ahole EIS for the Natural Energy Laboratory or the Kona Airport Industrial Park Subdivision may be generally reasonable but not specifically valid.

Response:

In response to the concerns that have been raised about the existing plant life on the project site, the developer has contracted a professional botanical consultant, Mr. Ken Nagata, to conduct a reconnaissance survey of the site. The purpose of this survey is to identify all plants found on the site. The survey will be conducted during July and is expected to be completed by the end of July. A copy of the botanical study will be forwarded to your agency for your information and use.

2. Comment:

An intensive archaeological survey of the project site was recommended, however, none was conducted.

Response:

An intensive archaeological survey of the project site is not considered necessary at this time, based on the recommendation of the consulting archaeologist, Mr. Lloyd Soehren. Please refer to Appendix B for the findings of the archaeological reconnaissance survey. According to Mr. Soehren, the archaeological features identified during the reconnaissance survey are not unique and require only proper documentation before the proposed project can proceed. In the event that any possible archaeological features are located during construction, the State Historic Preservation Office will be notified and an examination of these features will be made by an archaeologist.

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Mr. Sidney Fuke
Page 2
July 15, 1981

3. Comment:

What is the potential impact of drainage runoff channeled to culverts crossing the Queen Kaahumanu Highway on lands located makai of the highway?

Response:

Please refer to Section IV-E, relating to drainage impacts. In summary, runoff is not expected to have an adverse impact on the lands located makai of the highway due to regional topographic features, the low rainfall in the area, and the rocky materials over and underlying the project site and environs. Existing culverts under Queen Kaahumanu Highway will channel runoff to natural swales located makai of the highway.

Off-site runoff, routed around the proposed development to existing culverts under Queen Kaahumanu Highway, is not anticipated to be any greater than the existing runoff passing through the project site. On-site runoff will be conveyed either into the soil or to existing culverts crossing the highway. Drywells will contain most of the on-site runoff and effective filtration of contaminants can be expected from waters percolating vertically through the ground. However, lateral movement to the shoreline may occur should a void or tube be encountered. It is the intent of the developer to closely monitor all drywells during construction and seal any void or tube encountered. Flows that overtop the drywells are expected to be less contaminated and occur only during very large storms. Large storms occur infrequently and storm runoff is not expected to pose any serious problems. The average annual precipitation in the Kailua region is only 25 inches.

4. Comment:

What are the potential impacts of the proposed industrial designation on resort designations at Honokohau and Kaloko if the National Historic Park is not developed?

Response:

The potential impacts of the proposed project on a resort development are similar to those identified for the National Historic Park. These impacts are addressed in Section IV of the EIS and mitigation measures have been developed to minimize any possible adverse impacts. The

**WILSON
OKAMOTO
& ASSOCIATES**

C2361-01
Letter to Mr. Sidney Fuke
Page 3
July 15, 1981

highway and open space separating the proposed Light Industrial Subdivision and the possible resort area, are considered an adequate buffer zone to minimize any land use conflicts.

The visual impact of the proposed industrial subdivision is expected to pose the most significant problem for any resort development. As discussed in Section IV-G (visual impact), however, the existing impact of surrounding improvements and the implementation of mitigative measures by the developer must be considered when evaluating the significance of this impact. The coastal and ocean viewing corridors will not be affected by the proposed project and mauka views are already affected by existing developments. To the maximum extent possible, the visual impact of the proposed development from Queen Kaahumanu Highway and the lands makai of the highway will be minimized through a wide range of mitigation measures. These include development of a master landscaped plan, a landscaped berm along the entire road frontage of the project site, landscape internal roads, setback requirements and architectural design standards. These requirements will be established in coordination with the County and imposed on individual landowners through deed covenants or other agreements.

Development of a resort area makai of the highway will result in significant environmental impacts which would be of far greater concern than the possible impacts the Light Industrial Subdivision would have upon the resort area.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,



Gary Okamoto, Director
Planning Department

COPY

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720

June 1, 1981

RECEIVED
JUN 03 1981

WILSON OKAMOTO & ASSOCIATES

TO: Planning Department
FROM: Manager
SUBJECT: ENVIRONMENTAL IMPACT STATEMENT
KALOKE LIGHT INDUSTRIAL SUBDIVISION
TAKEMASA INTERNATIONAL, INC.
TAX MAP KEY 7-3-09:01

We have no objections to the subject document.

Please refer to the applicant's State Land Use Boundary Amendment request for any correspondence from this Department.

H. William Sewake
Manager

QA

cc - Wilson Okamoto & Associates, Inc.

WILSON
OKAMOTO
& ASSOCIATES



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1125 SOUTH KING STREET
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PHONE (808) 517-1121

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P.O. BOX 3930
HONOLULU, HAWAII 96807

C2361-01
July 15, 1981

Mr. H. William Sewake, Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Sewake:

We greatly appreciate your response concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement. Your response will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department



AMERICAN LUNG ASSOCIATION OF HAWAII

ENVIRONMENTAL IMPACT STATEMENT REVIEW

... an air quality assurance program

RECEIVED

Project: Kaloko Light Industrial Subdivision

JUN 08 1981 Date: 6/4/81

WILSON OKAMOTO & ASSOCIATES

1. Summary: Air quality impacts were not listed as "significant" even though this was not substantiated in Section IV by an analysis and conclusions regarding the significance of vehicular activity associated with the project.
2. Summary: It was indicated that traffic would not be adversely impacted by the proposed light industrial subdivision. By itself this may be true, but cumulatively the level of service on Queen Kaahumanu Highway is expected to be at Level E, i.e., an undesirable, unstable traffic flow situation. While the proposed industrial subdivision would clearly not be the primary cause, it is nevertheless a contributor, and all contributors to such a situation should be considered "significant".
3. Pages 31-32: No attempt was made to quantify the air quality impacts of the project either individually or cumulatively with the existing and approved traffic generators in the area. As a minimum, the following should have been included in the EIS:
 - a. Estimates of annual emissions for regulated pollutants resulting from project-related traffic.
 - b. Estimates of cumulative air quality impact with and without the project at critical locations, i.e., intersections, in the vicinity of the project.

James W. Morrow
James W. Morrow
Director
Environmental Health

JHM:jm
CL/TLO

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245 N. Kukui St.
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Telephone 537-1808

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Telephone 415-1258

KAUAI COUNTY
Post Office Box 391
Lihue, Hawaii 96746
Telephone 215-4142

MAUI COUNTY
Cameron Center
Kahului, Hawaii 96731
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WILSON
OKAMOTO
& ASSOCIATES



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P.O. Box 3520
Honolulu, Hawaii 96807

C2361-01
July 15, 1981

Mr. James W. Morrow
Director, Environmental Health
American Lung Association of Hawaii
245 N. Kukui Street
Honolulu, HI 96817

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Morrow:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

In response to your comments and questions, we submit the following:

1. Comment:
Air quality impacts were not listed as "significant" even though this was not substantiated in Section IV by an analysis and conclusions regarding the significance of vehicular activity associated with the project.

Response:

Air quality analysis for the Kaloko Light Industrial Subdivision was done on a comparative basis with the Kona Industrial Subdivision Expansion and Commercial Development Project. In the EIS, it was stated that there would be no significant impact on the air quality. This statement was based on findings from the EIA for the Kona Industrial Subdivision EIS, prepared by Belt, Collins and Associates, December 1979, which were as follows:

- a) There are no major stationary sources of pollution in the vicinity.
- b) Area is not highly developed, mobile-source activity is not yet a serious problem.
- c) Under worst-case meteorological conditions (South-West wind at our m/sec.) The State-although not the Federal--1-hour CO standard would be exceeded at most downwind locations within 10 to 20 meters of the intersections.
- d) Worse-case meteorological conditions coinciding with the PM peak-hour traffic is not highly probable.
- e) The AM peak-hour occurs just before noon at the Palani Road-Kuakini Highway intersection. Since mid-day wind directions and speeds are very comparable to the 4:00 p.m. conditions, the worst case meteorological conditions coinciding with the AM peak-hour traffic is not highly probable.

C2361-01
Letter to Mr. James W. Morrow
Page 2
July 15, 1981

f) By 1986, it should be noted that these cumulative emissions amount to less than 1 percent of the total current County wide emissions of each of the automotive pollutants, i.e., CO, NOx, and HC.

2. Comment:

It was indicated that traffic would not be adversely impacted by the proposed light industrial subdivision. By itself this may be true, but cumulatively the level of service on Queen Kaahumanu Highway is expected to be at Level E, i.e., an undesirable, unstable traffic flow situation. While the proposed industrial subdivision would clearly not be the primary cause, it is nevertheless a contributor, and all contributors to such a situation should be considered "significant".

Response:

It was stated that the proposed Light Industrial Subdivision will not have significant adverse effects on the existing highway facilities based on the findings that the level of service "E" would be maintained with or without the proposed project. Also, traffic projection for 1995 using the 8% growth rate will exceed the computed capacity for the Queen Kaahumanu-Palani Road-Kuakini Highway intersection with or without the proposed project.

3. Comment:

No attempt was made to quantify the air quality impacts of the project either individually or cumulatively with the existing and approved traffic generators in the area. As a minimum the following should have been included in the EIS:

- a. Estimates of annual emissions for regulated pollutants resulting from project-related traffic.
- b. Estimates of cumulative air quality impact with and without the project at critical locations, i.e., intersections, in the vicinity of the project.

C2361-01
Letter to Mr. James W. Morrow
Page 3
July 15, 1981

Response:

ESTIMATES OF ANNUAL EMISSIONS KALO KO
KALO KO LIGHT INDUSTRIAL SUBDIVISION

Year	Annual Emission (T/yr)		
	Carbon Monoxide	Nitrogen Oxides	Hydrocarbons
1985 w/o project	194	43	27
w/project	292	65	40
1995 w/o project	196	60	25
w/project	269	82	28

RESULTS OF MICROSCAR CO ANALYSIS
80 FT. R/W ROAD - QUEEN KAAHUMANU
HIGHWAY INTERSECTION

CO CONCENTRATIONS (mg/m³)
WORST 1-HR (WINDS @ 0H/SEC)

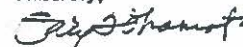
Receptor	1985	1985
R1	10.63	17.64
R2*	22.57	31.81
R3**	30.10	----

* Values representative of Queen Kaahumanu Hwy.-Keahole Airport Road Intersection

**Values representative of Queen Kaahumanu Hwy.-Palani Road Intersection 1995 CO concentration not considered due to intersection improvements with the implementation of the Kuakini Hwy. Realignment in 1986.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,


Gary Okamoto, Director
Planning Department

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720



May 18, 1981

RECEIVED

MAY 20 1981

WILSON OKAMOTO & ASSOCIATES

County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

Attention: Mr. Sidney M. Fuke, Director

Subject: Environmental Impact Statement
Kaloiko Light Industrial Subdivision
Kaloiko, North Kona, Hawaii

Gentlemen:

With reference to the environmental impact statement prepared by Wilson, Okamoto & Associates, Inc. for Takemasa International, Inc.'s Kaloiko Light Industrial Subdivision, the following comments are made:

1. Electrical improvements - At the present time, there is an existing 69KV, overhead, transmission line on Queen Kaahumanu Highway fronting the proposed development. There are no existing distribution circuits available to provide immediate electrical service to the proposed development.

A 12.47KV distribution circuit can be installed on the existing transmission pole line, however, approval must be acquired from the State of Hawaii, Department of Transportation. If it is determined that an electrical substation is required to provide electrical power to the proposed subdivision, the substation will be designed and constructed by HELCO and paid for by Takemasa International, Inc. HELCO will negotiate the ownership and location of the substation lot with the developer.

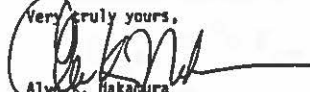
2. The location of utility poles within the subdivision will be determined by HELCO and installation costs paid for by the developer in accordance with HELCO's tariff. Pole and anchor easements are necessary.

We are assuming that all roadways will be constructed to County of Hawaii standards and will be dedicated to the County of Hawaii.

HAWAII ELECTRIC LIGHT COMPANY, INC.

County of Hawaii, Planning Department
Page Two
May 18, 1981

3. Street lights may be installed on the utility poles providing the County's share of the joint pole interests are paid for by the developer.

Very truly yours,

Alvin K. Nakamura
Manager
Engineering Department

AKM:DHT:bk

cc: Takemasa International, Inc. ✓
c/o Wilson, Okamoto & Associates, Inc.

**WILSON
OKAMOTO
& ASSOCIATES**



**ENGINEERS
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C2361-01
July 15, 1981

Mr. Alva Nakamura, Manager
Engineering Department
Hawaii Electric Light Company, Inc.
P. O. Box 1027
Hilo, Hawaii 96720

Subject: EIS for Kaloko Light Industrial Subdivision

Dear Mr. Nakamura:

We greatly appreciate your response and comments concerning the Kaloko Light Industrial Subdivision Environmental Impact Statement.

The developer agrees to acquire all necessary approvals and easements, and pay all necessary costs for electrical improvements, utility pole installations, and joint pole interests. If connection to existing sources is not adequate or practical for the proposed project, the developer will coordinate with HELCO to construct a substation. As indicated in Figure 7 of the EIS, the preliminary location of the substation is near the southwest corner of the project site.

We hope that we have adequately responded to your comments. Your comments will be included in the final EIS document.

Sincerely,

Gary Okamoto, Director
Planning Department